ASX and Media Release
14 December 2023

Additional critical mineral product stream doubles Toliara Project's NPV

Key points

- Pre-feasibility study on the production of monazite has significantly enhanced the forecast financial returns from the Toliara Project.
- With an incremental NPV_{10} of US$1.0 billion (post-tax, real), the Monazite PFS has doubled the Toliara Project's overall NPV_{10} to US$2.0 billion (post-tax, real).
- Monazite is a rich source of rare earth elements critical to the world's green energy transition and represents 2.0% of the heavy mineral in the Toliara Project's Mineral Resources estimate.
- The Monazite PFS demonstrates that tails from the mineral sands processing planned under the Mineral Sands DFS2 can be easily upgraded to a monazite product, for modest additional capital expenditure. Capitalising on what is essentially a 'waste' stream will make the Toliara Project one of the largest and most cost-competitive sources of rare earth oxides globally.
- Other key incremental outcomes from the Monazite PFS include:
  - IRR of 79%.
  - Capex of US$71 million and a capital payback period of 1 year.
  - Average annual monazite production of 21.8kt, containing 2.8kt of NdPr.
  - LOM free cash flow of US$4.7 billion, averaging US$130 million per annum.
  - Average annual EBITDA of US$164 million.
- Key overall outcomes from incorporating the Monazite Project in the Toliara Project include:
  - Average revenue to cash cost of sales ratio of 4.3 over the 38-year modelled mine life.
  - Increase of LOM free cash flow by 80% to US$10.6 billion, averaging US$306 million per annum.
  - Average annual EBITDA of US$371 million.

African mineral sands producer and developer, Base Resources Limited (ASX & AIM: BSE) (**Base Resources**) is pleased to release the outcomes of its pre-feasibility study on exploitation of the contained monazite at its Toliara Project in Madagascar through concentration of the existing waste stream from the project's mineral sands processing facilities to produce a valuable monazite product (**Monazite PFS**).

On an incremental basis, the Monazite PFS has delivered exceptional outcomes and is a significant enhancement of the Toliara Project as outlined in the enhanced definitive feasibility study on the project's mineral sands (**Mineral Sands DFS2**). For modest additional estimated capital expenditure of US$71 million, the Monazite PFS outcomes include an incremental post-tax/pre-debt (real) NPV_{10} of US$1.0 billion, IRR of 79% and an average revenue to cost of sales ratio of 7.9, over an initial 38-year mine life. When combined with the Mineral Sands DFS2, the Toliara Project has an overall post-tax/pre-debt (real) NPV_{10} of US$2.0 billion.

Managing Director of Base Resources, Tim Carstens, said:

"Put simply, the outcomes from our Monazite PFS reinforce our belief that Toliara is the best undeveloped mineral sands project in the world. Unsurprisingly, adding another critical mineral stream through concentrating what would otherwise have been 'waste' from the mineral sands processing has materially improved the forecast financial performance of the project, with a 100% increase in NPV and

free cash flow of almost US$10.6 billion over the initial modelled life of the project. Utilising the waste stream as an essentially free source of monazite feed will make the Toliara Project one of the largest and most cost-competitive sources of rare earth oxides globally."

"We have always believed in the Toliara Project's potential to be a catalyst for growth in Madagascar, creating transformational opportunities for our communities, economic stimulus for the Toliara region and being a flagship investment for the Government. The addition of the monazite product stream enhances these opportunities for all stakeholders, with the project now forecast to generate over US$4.7 billion in direct government revenue and community development expenditure over the initial 38-year mine life."

"With the recent conclusion of Presidential elections in Madagascar and reform of the mining regulatory regime well progressed, we believe that 2024 will see conditions supportive of the Toliara Project's progression. We look forward to resuming discussions with the newly formed Government early in the new year. We remain confident that acceptable fiscal terms can be secured that will support development of the Toliara Project, delivering clear and compelling benefits to our host communities, the nation of Madagascar and our shareholders."

Investment evaluation

Below are the key financial and production outcomes from the Monazite PFS, together with the outcomes from Mineral Sands DFS2.

		Unit	Monazite PFS	Mineral Sands DFS2	Combined
NPV_{10} (discount rate of 10%), post tax, real		**US$ millions**	**999**	1,008	2,006
NPV_8 post tax, real*		*US$ millions*	*1,281*	1,385	*2,666*
NPV_{10} spot monazite price post tax, real*		*US$ millions*	*679*	1,008	*1,687*
IRR		%	**78.6%**	**23.8%**	32.4%
Initial (Stage 1) Capex		US$ millions	**71**	**520**	591
Construction time (Stage 1)		Months	**29**	**27**	27
Stage 2 Capex		US$ millions	**N/A**	**137**	137
Capital Payback Period (Stage 1 + 2)		Years	**1.0**	**4.5**	3.6
Production – Monazite		kt pa	**21.8**	**N/A**	**21.8**
Production – ILM/RUT/ZIR		kt pa	**N/A**	**1,033**	1,033
Life of mine (LOM)		years	**38**	**38**	38
LOM Operating Costs + Royalty		US$/t ore mined	**0.98**	**3.78**	4.92
LOM Operating Costs + Royalty	(A)	US$/t produced	**1,089**	**88**	112
LOM Revenue	(B)	US$/t produced	**8,648**	**306**	477
LOM Cash Margin	(B-A)	US$/t produced	**7,559**	**218**	365
LOM Revenue: Cost of Sales Ratio	(B/A)	Ratio : 1	**7.9**	**3.5**	4.3
LOM Free Cash Flow		US$ millions	**4,733**	**5,922**	10,655

* Alternative NPV calculations are provided for illustrative and comparative purposes. Spot monazite price assumed to be US$5,900/t. Base Resources considers a 10% discount rate to be the most appropriate for evaluation purposes.

Investor briefings

Base Resources will host two investor briefings to discuss the outcomes from the Monazite PFS on 19 December 2023 at 8.30am and 5.00pm (AWST). The briefings will be hosted by Tim Carstens (Managing Director), Kevin Balloch (Chief Financial Officer), Stephen Hay (General Manager – Marketing) and Andre Greyling (General Manager – Growth).

The briefings will be by webcast and teleconference. Details for accessing each are below. Participants will only be able to ask questions via the teleconference line. Participants that propose using the teleconference line will need to pre-register their details using the teleconference registration URL provided below. Upon registering, participants will receive an email with their unique PIN and dial-in details so that they can join the call on the day without needing to speak to an operator.

Australia webcast and teleconference

Date: Tuesday, 19 December 2023
Time: 8.30am AWST / 11.30am AEST
Webcast URL: https://webcast.openbriefing.com/bse-mu-2023-au/
Teleconference pre-registration URL: https://registrations.events/direct/OCP60911

UK webcast and teleconference

Date: Tuesday, 19 December 2023
Time: 5.00pm AWST / 9.00am BST
Webcast URL:https://webcast.openbriefing.com/bse-mu-2023-uk/
Teleconference pre-registration URL: https://registrations.events/direct/OCP61023

Further information about the Monazite PFS and the PFS Materials

Included with and forming part of this announcement are supporting slides titled "Toliara Monazite Project Pre-Feasibility Study" containing detailed information about the Monazite PFS and its outcomes (**PFS Materials**). This announcement should be read together with these slides. The information contained in the slides includes information in relation to the modifying factors in JORC Code Table 1, and the material assumptions (including in respect of the modifying factors) and underlying methodologies and inputs used for the Monazite PFS and from which the financial and production outcomes and other forward-looking statements set out in the PFS Materials were derived.

Base Resources has concluded that it has a reasonable basis for providing the forward-looking statements set out in the PFS Materials. This includes a reasonable basis to expect that Base Resources will, when required, be able to fund development of the Toliara Project, including the additional capital expenditure required to produce a monazite product, and obtain a legal right to exploit monazite[1]. The Disclaimer & Important Notices on pages 2 and 3 of the supporting slides apply to all the PFS Materials, including this announcement.

The PFS Materials also contain the outcomes from Mineral Sands DFS2 and select information from that study. This information has been provided to contextualise the outcomes of the Monazite PFS and because the Monazite PFS was based on concentration of the monazite waste stream from the Mineral Sands DFS2. For this reason, and to the extent material to the production and financial outcomes from the Monazite PFS, the assumptions and underlying methodologies and inputs used for the Mineral Sands DFS2 have also been included in the PFS Materials.

For further information in relation to the Mineral Sands DFS2, refer to Base Resources' announcement on 27 September 2021 "DFS2 enhances scale and economics of the Toliara Project" available at https://baseresources.com.au/investors/announcements/. Base Resources confirms that all the material assumptions underpinning the production information and forecast financial information disclosed in that announcement continue to apply and have not materially changed.

----- ENDS -----

[1] The Toliara Project's existing mining tenure, *Permis d'Exploitation* 37242, does not currently provide the right to exploit monazite.

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This release has been authorised by the Board of Base Resources.

About Base Resources

Base Resources is an Australian based, African focused, mineral sands producer and developer with a track record of project delivery and operational performance. The Company operates the established Kwale Operations in Kenya and is developing the Toliara Project in Madagascar. Base Resources is an ASX and AIM listed company. Further details about Base Resources are available at www.baseresources.com.au.

Toliara Monazite Project Pre-Feasibility Study

14 December 2023

Disclaimer & Important Notices

Toliara Monazite Pre-Feasibility Study

This document has been prepared by Base Resources Limited. The information included in this document relates to the outcomes of the Monazite Pre-Feasibility Study for the Toliara Project (**Monazite PFS**). The Monazite PFS is based on technical, economic and other conditions and information as at the date of this document, which may be subject to change. Accordingly, the outcomes, conclusions and other information presented in this document should be viewed in this light. Information in this document should also be read in conjunction with other announcements made by Base Resources to ASX, particularly Base Resources' announcement dated 27 September 2021, titled "DFS2 enhances scale and economics of the Toliara Project", available at https://baseresources.com.au/investors/announcements/ (**Mineral Sands DFS2 Announcement**).

Mineral Sands Project – Production and forecast financial information

This document discloses the summary outcomes of the enhanced Mineral Sands Definitive Feasibility Study for the Toliara Project (**Mineral Sands DFS2**) on a standalone basis and aggregated basis with the summary outcomes from the Monazite PFS. Mineral Sands DFS2 was based on technical, economic and other conditions and information as at 27 September 2021. Accordingly, the summary outcomes should be viewed in this light.

The outcomes include production and forecast financial information. The Mineral Sands DFS2 Announcement discloses the material assumptions and underlying methodologies and inputs used for deriving these outcomes, including the production information and forecast financial information. Base Resources confirms that all the material assumptions underpinning the production information and forecast financial information disclosed in the Mineral Sands DFS2 Announcement continue to apply and have not materially changed.

Monazite Project – Production and forecast financial information

This document contains the outcomes of the Monazite PFS. These outcomes include production and forecast financial information. This document discloses the material assumptions and underlying methodologies and inputs used for deriving these outcomes, including the production information and forecast financial information. Given the Monazite PFS was based on concentration of the monazite waste stream from Mineral Sands DFS2, assumptions and underlying methodologies and inputs used for Mineral Sands DFS2 have been included in this document to the extent material to the production and forecast financial information.

Ranobe Mineral Resources and Ore Reserves estimates

Save in the case of the estimates on a mineralised unit basis, the details included about the estimated Ranobe Mineral Resources and Ore Reserves have been extracted from Base Resources' ASX announcement titled "Updated Ranobe Mineral Resources and Ore Reserves estimates" dated 27 September 2021, available at https://baseresources.com.au/investors/announcements/. Base Resources confirms that it is not aware of any new information or data that materially affects the information included in that announcement, and that all material assumptions and technical parameters underpinning those estimates continue to apply and have not materially changed.

The Ranobe deposit Mineral Resources estimates on a mineralised unit basis have been re-issued from the Mineral Sands DFS2 Announcement, which was issued with the consent of Competent Person, Mr Ian Reudavey. They are zonal estimates in respect of the Mineral Resources estimate included in Base Resources' announcement on 27 September 2021 "Updated Ranobe Mineral Resources and Ore Reserves estimates". Together with the Mineral Sands DFS2 Announcement, this announcement is available at https://baseresources.com.au/investors/announcements/. Base Resources confirms that it is not aware of any new information or data that materially affects the information included in the 27 September 2021 announcement (and therefore the information on a mineralised unit basis included in the Mineral Sands DFS2 Announcement) and all material assumptions and technical parameters underpinning the estimates in the 27 September 2021 announcement (and therefore the estimates on a mineralised unit basis included in the Mineral Sands DFS2 Announcement) continue to apply and have not materially changed. Base Resources confirms that the form and context in which the Competent Person's findings are presented have not been materially modified.

The Ranobe Mineral Resources included in this document are reported inclusive of the Ranobe Ore Reserves.

Estimated Ranobe Mineral Resources in the Measured and Indicated categories underpin the production and forecast financial information for the Monazite Project included in this document. No estimated Ranobe Mineral Resources in the Inferred category underpin the production and forecast financial information for the Monazite Project included in this document.

This Mineral Resources estimate was prepared by Competent Person in accordance with the requirements of the JORC Code. The proportions of Measured and Indicated Mineral Resources generally underpinning the production targets are set out on slide 23, with the Proved Ore Reserves reflecting the Measured Mineral Resources portion and the Probable Ore Reserves reflecting the Indicated Mineral Resources portion. By way of background:

- The Monazite PFS assumes the concentration of the monazite waste stream from Mineral Sands DFS2.
- Mineral Sands DFS2 considered mining the mineral sands in the estimated Ore Reserves which does not include monazite in the HM assemblage.
- The conversion of Mineral Resources to Ore Reserves by the Competent Persons was only for mineral sands products in the HM assemblage and did not extend to monazite because the existing Toliara Project exploitation permit does not currently provide the right to exploit that product.
- The classification of the Ranobe Ore Reserves into Proved and Probable generally followed the Mineral Resources estimate classification – i.e. Measured Mineral Resources converted to Proved Ore Reserves and Indicated Mineral Resources converted to Probable Ore Reserves.

The Ore Reserves estimate was prepared by Competent Persons in accordance with the requirements of the JORC Code.

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Forward looking statements

Certain statements in or in connection with this document contain or comprise forward looking statements. Such statements may include, but are not limited to, statements with regard to capital cost, operating cost, capacity, future production and available grades, forecast global supply, product prices, sales projections and financial performance and may be (but are not necessarily) identified by the use of phrases such as “will”, “expect”, “anticipate”, “believe” and “envisage”. By their nature, forward looking statements involve risk and uncertainty because they relate to events and depend on circumstances that will occur in the future and may be outside Base Resources’ control. Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in product prices and exchange rates and business and operational risk management. Some risks that could impact Base Resources' ability to achieve the outcomes or results expressed or implied by such statements include those set out on the slides titled “Risks and opportunities”. Subject to any continuing obligations under applicable law or relevant stock exchange listing rules, Base Resources undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events.

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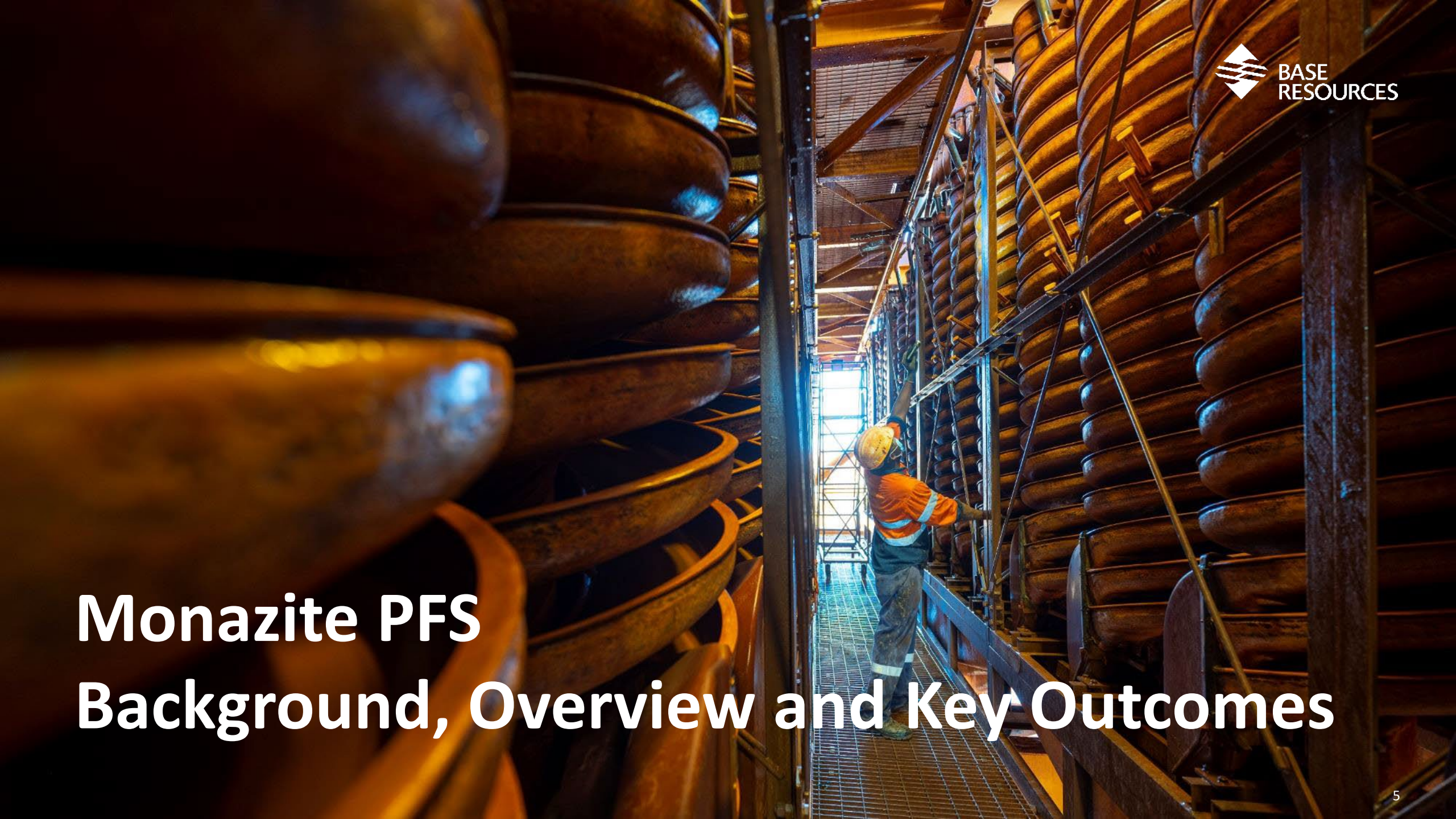
Glossary

A glossary of key terms used in this document is contained on slides 80 to 83.

All references to currency ($ or US$) are to United States Dollars unless otherwise stated

Contents

- Monazite PFS – Background, Overview and Key Outcomes
- Monazite PFS – Technical Summary and Outcomes
- Mineral Sands DFS2 Recap
- Glossary and Appendices



Monazite PFS
Background, Overview and Key Outcomes

Key highlights

The Monazite PFS utilises what is essentially a zero-cost 'waste' stream from mineral sands processing, significantly enhancing forecast financial returns from the Toliara Project and making the project one of the most cost-competitive sources of rare earth oxides

Monazite PFS highlights
(monazite only)

- Post Tax NPV_{10} US$1.0 billion
- IRR 78.6%
- **26.1 ktpa peak monazite production**
  (Peak stage 2 average production - first 10 years of stage 2 optimised mine plan over operating years 6-15)
- Incremental capex US$71 million
- LOM free cash flow US$4.7 billion

Integrated Toliara Project highlights
(monazite + mineral sands)

- Post Tax NPV_{10} US$2.0 billion
- IRR 32.4%
- **1.3 Mtpa ilmenite, rutile + zircon**
  26.1 ktpa monazite
  (Peak stage 2 average production - first 10 years of stage 2 optimised mine plan over operating years 6-15)
- average EBITDA US$371 million pa
- LOM free cash flow US$10.6 billion

One Project – multiple critical mineral streams

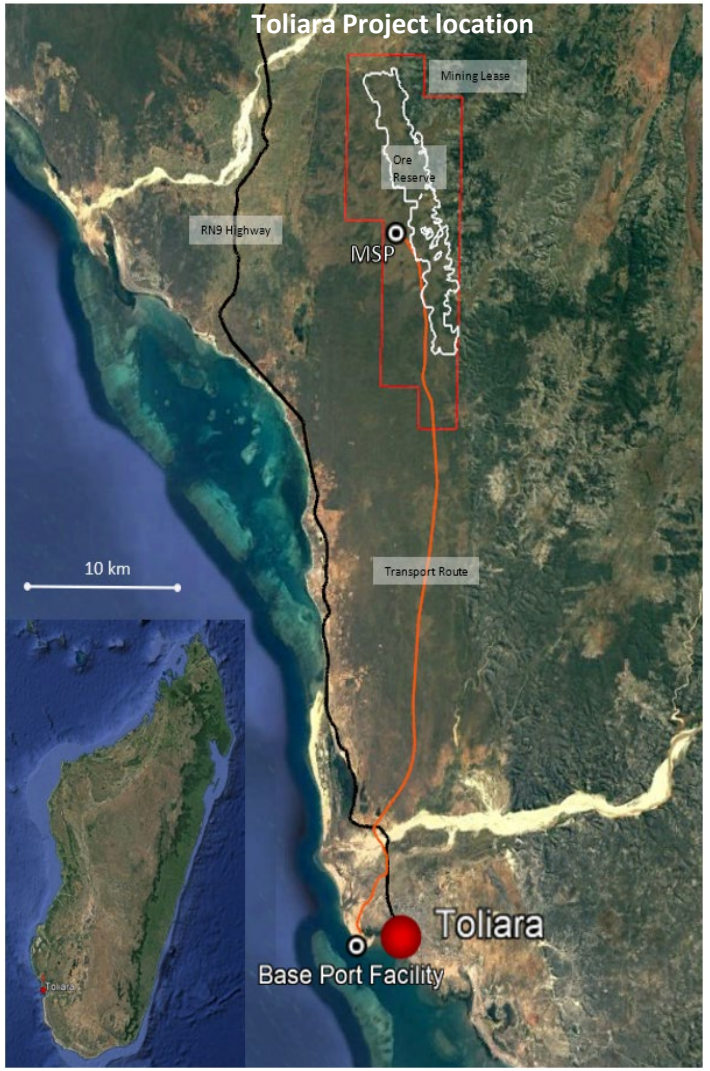
The world class Ranobe mineral sands deposit on which the Toliara Project is based is located in southwest Madagascar, 45km north of the regional port town of Toliara, 18km inland and approximately 640km southwest of Antananarivo, the capital of Madagascar

Toliara Project – Mineral Sands

- Base Resources acquired the project in January 2018 and completed a full suite of studies focused on realising value from the deposit's contained ilmenite, rutile and zircon.
- The mineral sands studies culminated in release of the Mineral Sands DFS2 in 2021. This was an updated definitive feasibility study on the Mineral Sands Project, with the study taking advantage of enlarged Mineral Resources and Ore Reserves estimates to enhance the project by increasing its scale.
- Mining rates in the Mineral Sands DFS2 were 13Mtpa in Stage 1, increasing to 25Mtpa following implementation of Stage 2 in operating year 5.
- The Mineral Sands DFS2 delivered a post-tax/pre-debt (real) NPV_{10} of US$1,008m and an average revenue to cash cost of sales ratio of 3.5 over an initial 38-year mine life.
- Progression towards development has been delayed while the fiscal terms applicable to the project are negotiated with the Government of Madagascar.

Toliara Project – Rare Earths

- The Ranobe deposit contains a significant volume of monazite – one of the richest sources of rare earth elements – with an estimated 2% of the Ranobe Mineral Resources heavy mineral assemblage being monazite.
- Monazite was treated as a waste stream in the Mineral Sands DFS2 and was returned to the mining pit void together with all other tailings.
- Accelerating demand for rare earth oxides (REOs) to fuel the global green energy transition and the delay in Project progression has provided the opportunity to consider the options for realising value from the monazite through a 'bolt on' project to the Mineral Sands Project.
- The essentially free source of monazite feed from the Mineral Sands Project would potentially be one of the world's most cost-competitive sources of REO minerals.



Rare Earths Concept Study – options identified

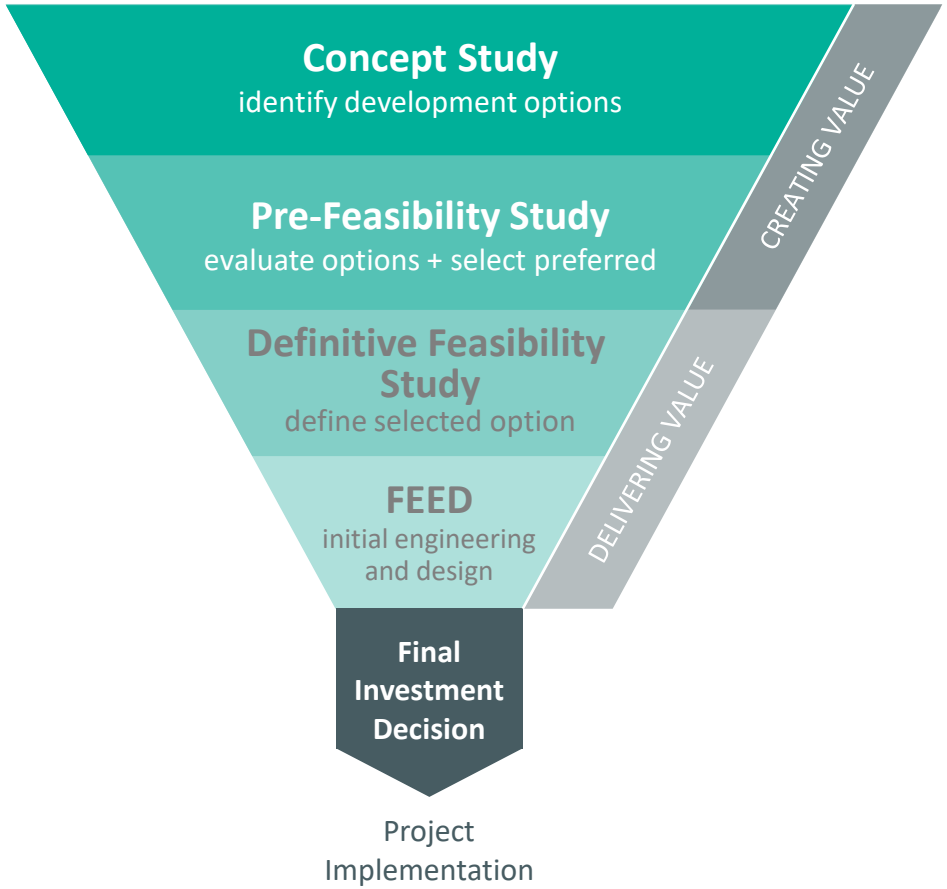
The Toliara Project Rare Earths Concept Study identified four potential development options based on the known Ranobe mineral assemblage and REO content and quantities

An extensive research phase underpinned the Toliara Rare Earths Concept Study, supported by leading specialists in the field. The Concept Study identified four development options, described below in increasing order of cost and complexity:

1. **Monazite Concentrate**: Sell the existing monazite waste stream from the Mineral Sands Project mineral separation plant (MSP), which contains approximately 20% monazite.
2. **Monazite Product**: Construct a monazite concentrator plant (MCP) to concentrate the MSP monazite waste stream and produce a product containing 90% monazite.
3. **Mixed Rare Earth Carbonate (MREC)**: Implement option 2 (Monazite Product) for the first five operating years then, following completion of studies, construct a refinery to produce an MREC product for the remainder of the mine life.
4. **Separated REOs**: Implement option 2 (Monazite Product) for the first five operating years then, following completion of studies, construct a refinery and separation plant to produce REOs for the remainder of the mine life.

For all options, the finished product would be containerised for sale and export. Due to the level of naturally occurring radioactivity in monazite (given its elevated content of uranium and thorium), appropriate safety protocols and management are required during processing and logistics, including specialised Class 7 Dangerous Goods (Class 7) cargo containers and transport. The **Monazite Concentrate option was screened out** due to the significant logistical complexity of transporting 263ktpa of Class 7 containerised product, with the same regulatory hurdles as Monazite Product. All remaining options were taken forward to the Pre-Feasibility Study (PFS) stage for further evaluation. The PFS for MREC and separated REOs remain in progress.

The PFS for production of a monazite product is the subject of this document.



Monazite PFS activities and partners

As a 'bolt on' to the Mineral Sands Project, Monazite PFS activities focused on the incremental changes to the Toliara Project required to produce and sell a monazite product

Key PFS activities

- **Processing:** the flowsheet developed for the Mineral Sands Project and verified during the Toliara Rare Earths Study was further optimised to split dry and wet monazite separation between the MSP and new MCP respectively. An MCP location study was conducted, MSP to MCP pumping system designed and 3D engineering modelling performed.
- **Container handling and export:** alternative locations for container export were considered, container yard layouts explored, export facility modifications to handle container shipping (widen trestle and load out platform to accommodate container truck movement), mooring enhancements, navigation and traffic flow assessments, clearance verifications, and Class 7 container vessel selection.
- **Workforce health safety and wellbeing:** a draft radiation management plan was developed, including site classification and strategies for mitigating radiation exposure.
- **Marketing:** market analysis and pricing assessments were conducted, along with developing an internal view of monazite pricing for financial modelling.
- **Opex:** transport logistics and cost options for sea freight of containers were established.
- **Legal and environment:** the legal and environmental requirements that need to be satisfied to exploit monazite, including under the new Malagasy Mining Code, were analysed.
- **Environmental and social**: the environmental and social risks, impacts, and opportunities were evaluated.
- **Implementation**: a detailed implementation strategy was formulated to expedite monazite production, with corresponding updates to the Toliara Project schedule to confirm the strategy's effectiveness.

PFS delivery partners

- Mineral Technologies delivered the engineering development and capital cost estimate for the MCP.
- Lycopodium delivered the export facility on-shore infrastructure, consolidated capital cost estimate and schedule.
- PRDW delivered the engineering development and cost estimate for modifications to the offshore component of the export facility to accommodate container transport and shiploading.
- Ibis Consulting completed a preliminary assessment of the environmental and social risks, impacts and opportunities of the Monazite Project.

Peer Review

- Met Chem Consulting, a specialist rare earths process consultant, reviewed the MCP process deliverables (flowsheets, mass & water balance).

Monazite Project overview

The Monazite Project will be integrated into the Mineral Sands Project, processing the monazite waste stream to produce monazite

Mineral sands monazite waste stream

The Mineral Sands Project's MSP was designed to direct the monazite waste from the rutile and ilmenite processing streams to a designated reject bin, to be blended with sand tails from the wet concentrator plant (WCP) and returned to the mined-out pit void.

The Monazite PFS considered the concentration of the waste stream to produce monazite and demonstrated that the MSP's monazite waste stream can be easily separated from the other waste and upgraded to a monazite product with 90% purity, with the following key additional or modified infrastructure identified.

Modifications to the MSP:

- Installing four rare earth roll (RER) magnets in the MSP to concentrate the monazite waste stream in a dry process.
- Implement a pumping system to transfer the concentrated monazite from the MSP to the MCP.

New Monazite Concentrator Plant:

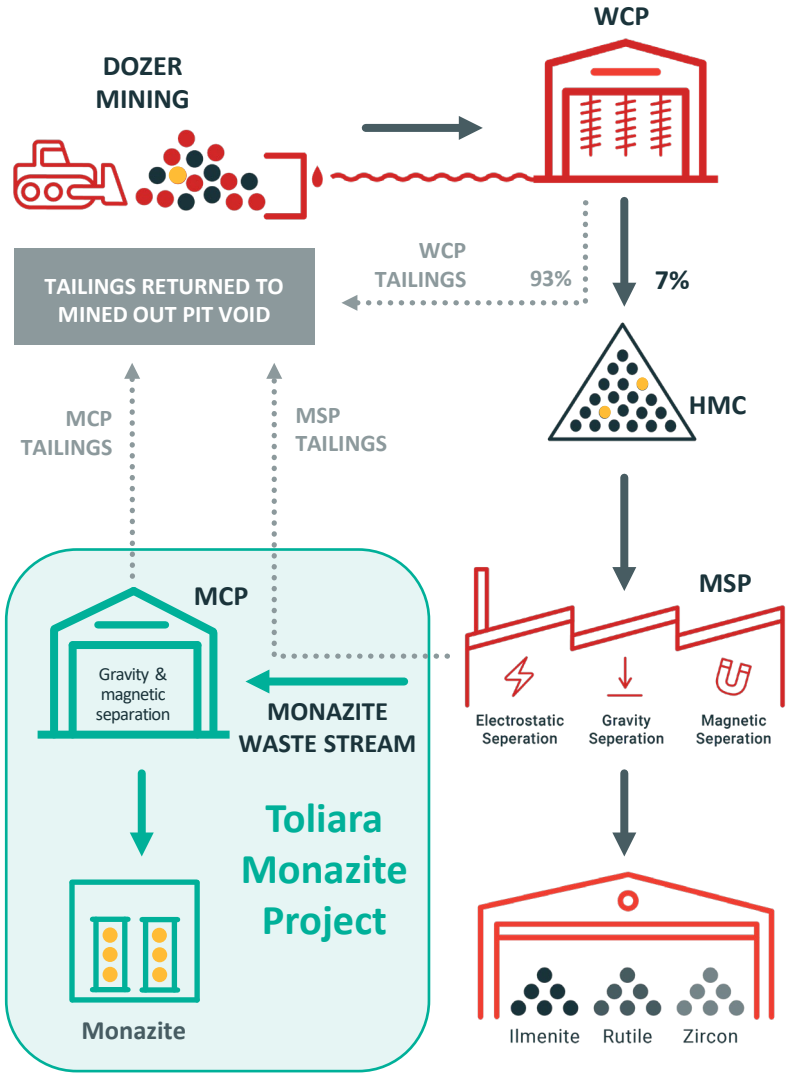
- Construction of a MCP positioned adjacent to the HMC stockpile and separate from other structures for effective radiation management. The MCP will house wet and dry separation processes and monazite load out facility where the product will then be packed into plastic bag lined drums, and subsequently loaded onto pallets and into dedicated containers.

Modifications to the export facility for container handling:

- Construction of a container laydown area.
- Upgrading the jetty trestle structure and the loadout platform to support container truck operations and enable container transfer to vessels.

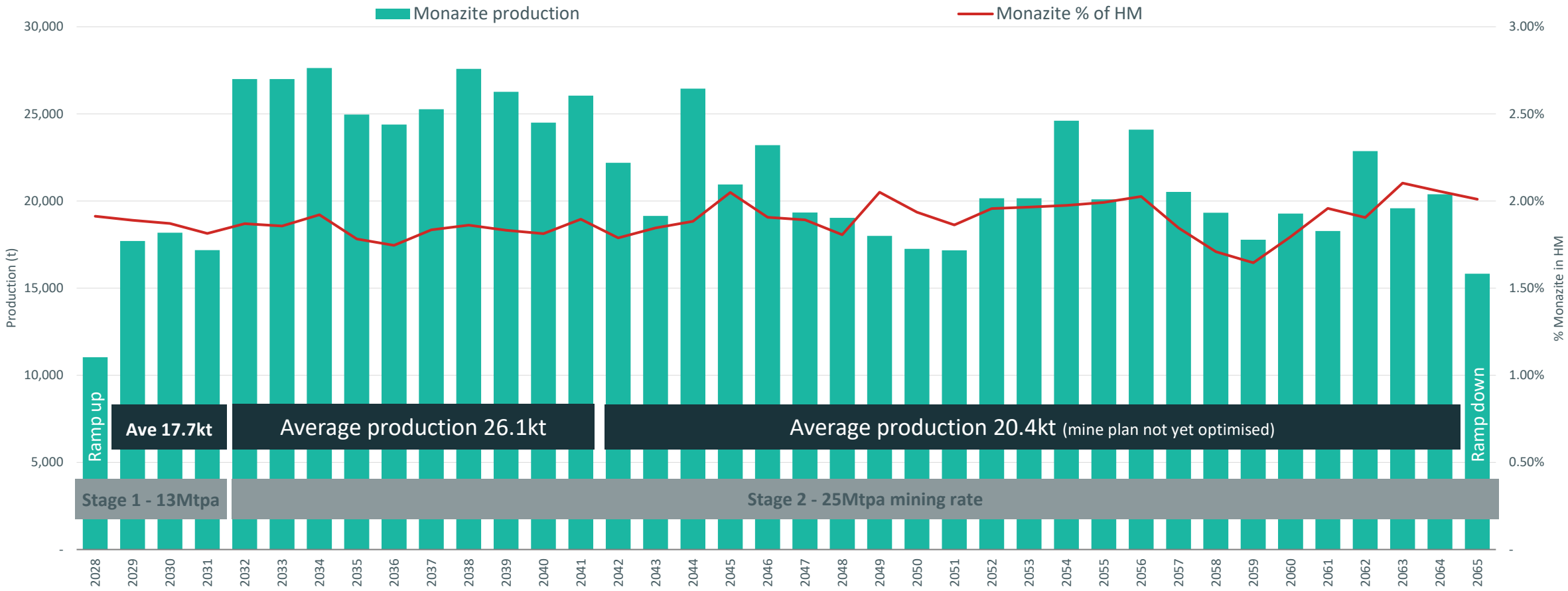
Power:

- The hybrid thermal, solar photovoltaics (PV) and battery storage system power plant will require a slight enlargement. However, no additional infrastructure will be necessary.



Monazite Project annual production profile

Monazite production rates peak during the first 10 years of Stage 2 of the Mineral Sands Project when mining rates increase to 25Mtpa and the mine plan has been fully optimised



2,580Mt
Estimated Mineral Resources
4.3% Heavy Mineral
2.0% Monazite in HM

904Mt
Estimated Ore Reserves
6.1% Heavy Mineral
38-year initial mine life

Extensional Drilling
completed in 2018/19 and lower sandy unit yet to be incorporated into estimated Mineral Resources or Ore Reserves

Monazite Project financial outcomes

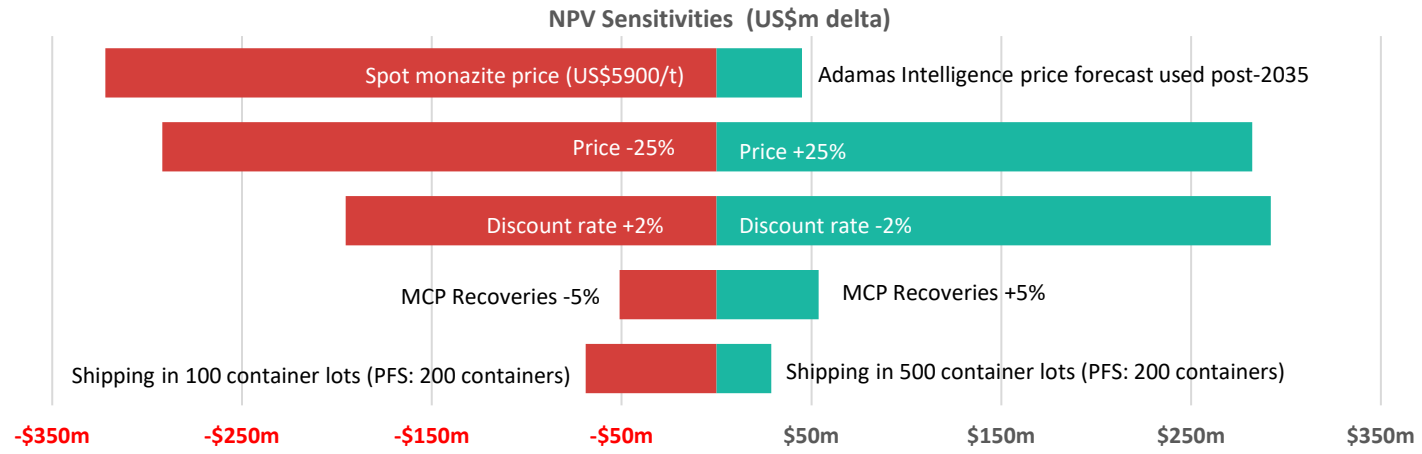
The Monazite Project delivers exceptional forecast financial returns due to its very low capital and operating costs

Incremental value of the Monazite Project PFS to Mineral Sands DFS2

- Post-tax / pre-debt (real) NPV @ 10% discount rate of US$999m.
- Annual averages (excluding first and last partial operating years):
  - Production of 21.8kt of monazite – containing 2.8kt of NdPr
  - EBITDA US$164m
  - Free cash flow US$130m

Select key inputs

- Monazite prices based on Adamas Intelligence forecast to 2035, then held flat for remainder of mine life.
- Market monazite payability of 35% for the contained magnet REOs of Nd/Pr and Dy/Tb oxides only.
- Includes the new Mining Code's 5% royalty and upfront contribution to the "Mining Fund for Community and Social Investment" equal to 3% of initial capex.

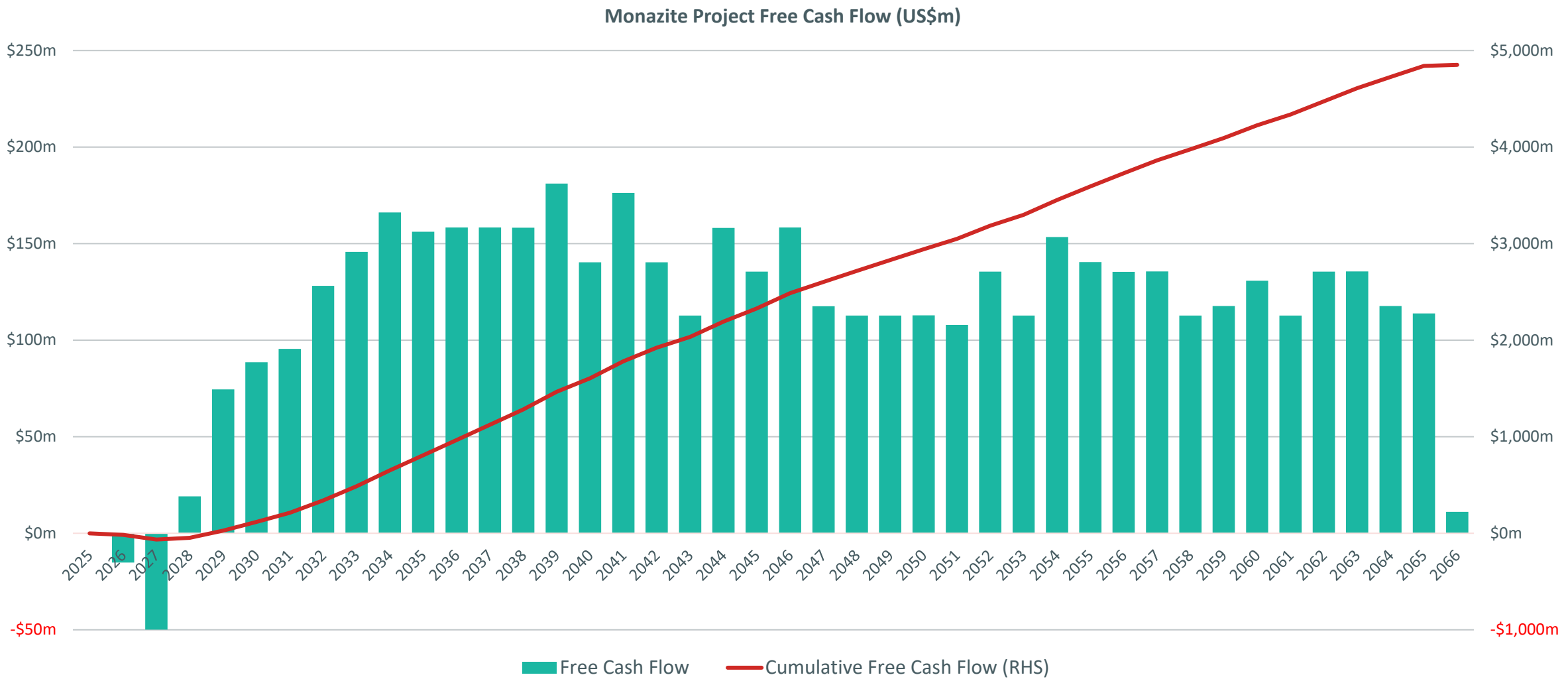


		Unit	Monazite PFS
NPV_{10} (discount rate of 10%), post tax, real		US$ millions	999
*NPV_8 post tax, real**		US$ millions	1,281
NPV_{10} – Spot monazite price, post tax, real		US$ millions	679
IRR		%	79%
Capex		US$ millions	71
Construction period – export facility		Months	29
Construction period – MCP		Months	15
Annual average production rate		Ktpa	21.8
Monazite payability for contained REEs		%	35%
LOM revenue		US$ millions	7,009
LOM operating costs		US$ millions	532
LOM free cash flow		US$ millions	4,733
Average annual free cash flow		US$ millions	130
LOM unit operating costs + royalty	(A)	US$/t produced	1,089
LOM unit revenue	(B)	US$/t produced	8,649
LOM revenue : cost of sales ratio	(B/A)	Ratio : 1	7.9

*Alternative NPV calculations are provided for illustrative and comparative purposes. Spot monazite price assumed to be US$5,900/t. Base Resources considers a 10% discount rate to be the most appropriate for evaluation purposes.

Monazite Project free cash flows

Benefiting from zero cost feed from the Mineral Sands Project monazite waste stream, the Monazite Project delivers strong incremental free cash flows



Monazite Project capital cost

With the Monazite Project being a 'bolt on' project to the Mineral Sands Project and leveraging its mining and processing activities and infrastructure, the incremental capex for the Monazite Project is only US$71 million, which relates to construction of the MCP and upgrades to the export facility for container handling and storage

Basis of the estimate

- Lycopodium coordinated the estimate, incorporating contributions from Mineral Technologies and PRDW.
- The estimate's reference date is Q4-2023 and has an accuracy of ±20-25%, compliant with an AACE Class 4 estimate and Base Resources' PFS Standard.
- The contingency allowance is 20%.
- No escalation provision is made.
- Vendor quotes provided 60% of the mechanical equipment cost estimates, with the remainder based on recent projects within the last year.
- Costs for electrical, instrumentation, and controls are factored at 60% of the mechanical costs.
- Earthworks and concrete quantities were derived from drawings and plans.
- Indirect costs were calculated as a proportion of direct costs, aligning with standard industry percentages for similar projects.
- For all other material rates, the Mineral Sands DFS2 rates plus 10% escalation were assumed. These rates are consistent with current costs in Lycopodium's ongoing projects.

Owner's costs

- Allows for all project costs outside Engineering, Procurement and Construction Management (EPCM) and construction contractors' scope.

Capital Cost Estimate	(US$m)
Monazite Concentrator Plant	13.1
Construction Distributables	5.1
Engineering and Construction Management Costs	5.6
Export Facility Infrastructure (onshore)	2.9
Export Facility Infrastructure (offshore)	19.1
Owner's Costs (detail below)	13.4
Sub total	**59.2**
Contingency (20%)	11.8
Total Project Capital Costs	**71.0**

Owner's Costs Estimate (Included above)	(US$m)
Shipping Containers (600), steel drums and pallets	4.2
Plant Mobile Equipment	3.1
Integrated Management Team, Specialist Consultants	3.5
Fees, Taxes, Duties, Spares, Tools & First Fills	1.2
Other	1.4
Total Owner's Cost	**13.4**

Toliara Project = mineral sands + monazite

The addition of the monazite revenue stream demonstrates the Toliara Project is truly world class

Integration of the Monazite Project with the Mineral Sands Project significantly improves the Toliara Project's forecast economics:

- NPV increases from US$1.0 billion to US$2.0 billion.
- LOM free cash flow increases from US$5.9 billion to US$10.6 billion.
- IRR improves from 23.8% to 32.4%.
- LOM revenue of US$18.9 billion.
- LOM unit revenue increases by 56% to US$477/t.
- LOM operating margin increases 67% to US$365/t.
- Revenue to cost of sales ratio increases to 4.3, remaining firmly in the first quartile of TZMI's most recent projected revenue to cost of sales of TiO_2 producers[#].
- Capital payback period reduces from 4.5 years to 3.6 years.
- Annual averages (excluding first and last partial operating years) for the integrated project include:
  - Revenue of US$493 million.
  - Operating costs of US$115 million (inclusive of royalties).
  - EBITDA of US$371 million.
  - Free cash flow of US$306 million.

[#] The Toliara Project is yet to be developed, with this comparison provided for illustration using the outcomes of the Mineral Sands DFS2 and Monazite PFS and life of mine production averages as compared to the TZMI projected revenue to cost of sales of TiO_2 producers in 2022.

		Unit	Monazite PFS	Mineral Sands DFS2	Mineral Sands + Monazite
NPV_{10} (discount rate of 10%), post tax, real		US$ millions	**999**	**1,008**	**2,006**
NPV_8 post tax, real*		US$ millions	**1,281**	**1,385**	**2,666**
IRR		%	**79%**	**23.8%**	**32.4%**
Initial (Stage 1) capex		US$ millions	**71**	**520**	**591**
Construction period (Stage 1)		Months	**29**	**27**	**27**
Stage 2 capex		US$ millions	**-**	**137**	**137**
Construction period (Stage 2)		Months	**-**	**21**	**21**
Capital payback period (Stage 1 + 2)		Years	**1.0**	**4.5**	**3.6**
Life of mine		Years	**38**	**38**	**38**
LOM free cash flow		US$ millions	**4,733**	**5,922**	**10,655**
LOM operating costs + royalty		US$/t ore mined	**0.98**	**3.78**	**4.92**
LOM operating costs + royalty	(A)	US$/t produced	**1,089**	**88**	**112**
LOM revenue	(B)	US$/t produced	**8,648**	**306**	**477**
LOM cash margin	(B-A)	US$/t produced	**7,559**	**218**	**365**
LOM revenue : cost of sales ratio	(B/A)	Ratio : 1	**7.9**	**3.5**	**4.3**

*Alternative NPV calculations are provided for illustrative and comparative purposes. Base Resources considers a 10% discount rate to be the most appropriate for evaluation purposes.

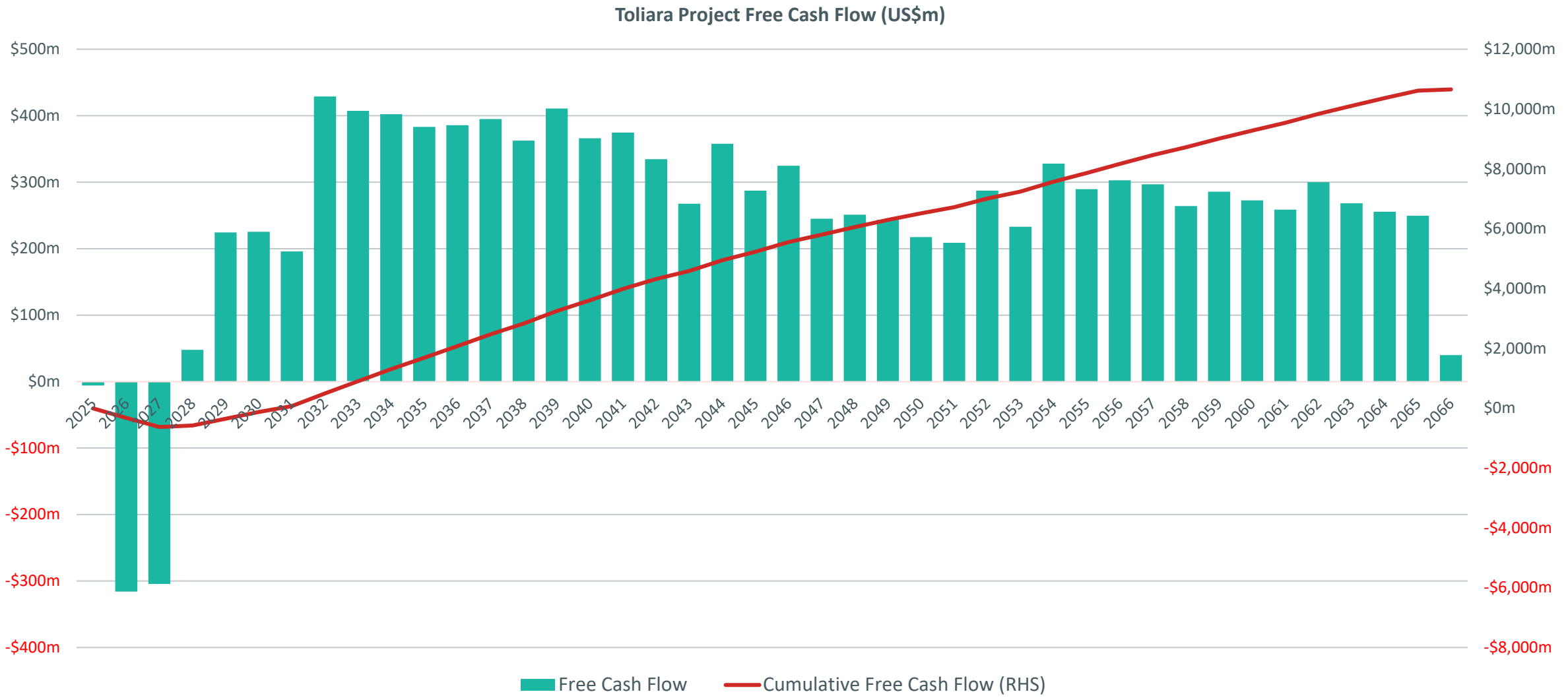
Integrated Toliara Project

The production and economics of the Toliara Project during the 'peak' first 10 years of Stage 2 operations are exceptional, when mining rates increase to 25Mtpa and the mine plan has been fully optimised

	LOM		Stage 1# Years 2 - 4.25	Peak Stage 2 # Years 6 -15	Stage 2‡ Year 16+
	Total	annual avg*	annual avg	annual avg	annual avg
Ore mined (Mt)	**904**	23.9	12.6	**25.1**	25.1
Total Mineral Sands production (kt)	**38,866**	1,033	890	**1,297**	935
Total Monazite production (kt)	**810**	21.1	17.4	**26.1**	20.4
Revenue – Total (US$)	**$18,925m**	$494m	$401m	**$623m**	$470m
Operating Costs - Total (US$)	**$4,448m**	$115m	$104m	**$132m**	$114m
EBITDA (US$)	**$14,164m**	$371m	$289	**$483m**	$348m
Free Cash Flow (US$)	**$10,655m**	$306m	$217m	**$392m**	$288m
Mineral Sands Revenue per tonne final product produced (US$)	**$301**	$301	$314	**$299**	$299
Monazite Revenue per tonne final product produced (US$)	**$8,648**	$8,649	$6,589	**$8,706**	$8,886
Operating Costs – per tonne mined (incl. royalties) (US$)	**$4.92**	$4.83	$8.24	**$5.25**	$4.54
Operating Costs – per tonne produced (incl. royalties) (US$)	**$112**	$111	$114	**$99**	$118
Revenue : Cost of sales ratio	**4.3**	4.3	3.9	**4.7**	4.1

excludes ramp up
* Does not include the first and last partial operating years
‡ Does not include the last partial operating year

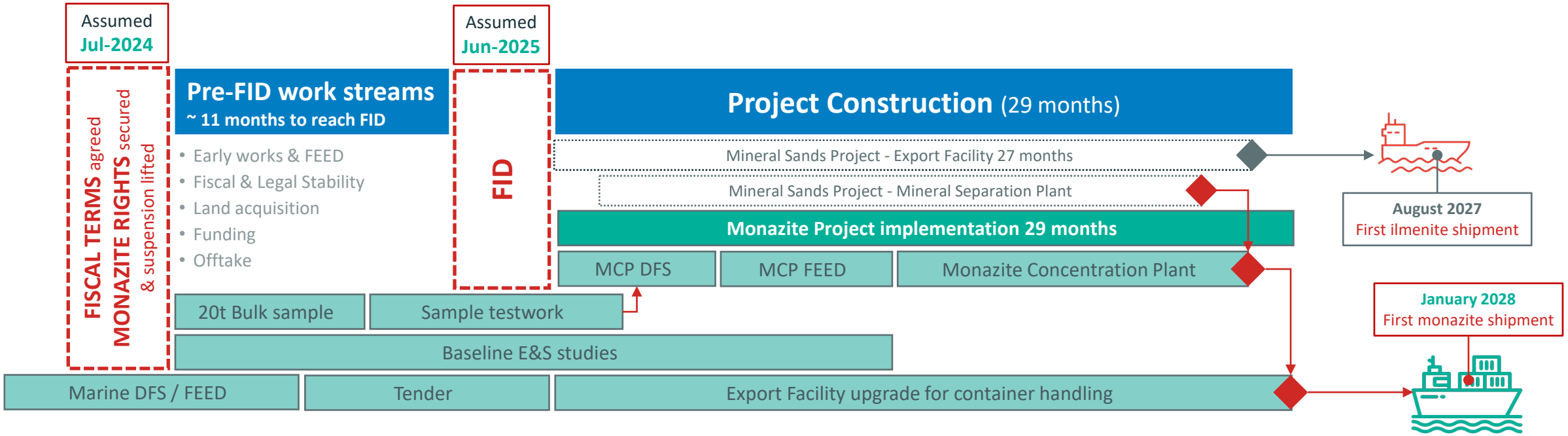
Integrated Toliara Project

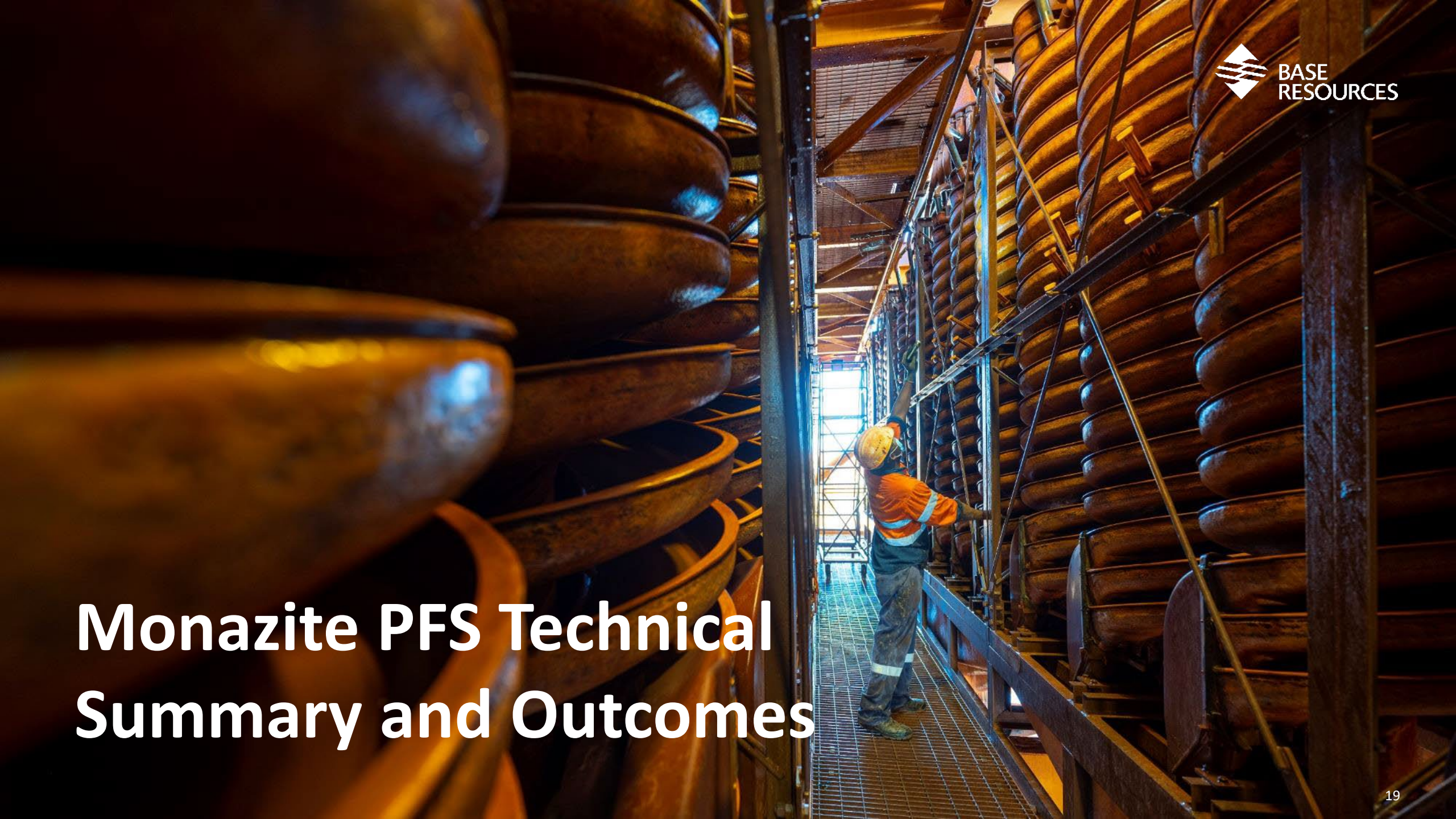


Monazite Project indicative timeline

The schedule aims to produce monazite as early as possible without impacting the Mineral Sands Project schedule

- Right to exploit monazite to be secured together with fiscal terms and lifting of suspension (LOS) for the Toliara Project.
- The definitive feasibility study phase for the Monazite Project is anticipated to be short, only requiring optimisation, as the monazite concentration flowsheet was established during the Mineral Sands Project PFS/DFS phases.
- Following LOS, a 20t bulk sample will be extracted from the site to aid MCP optimisation.
- Baseline environmental and social impact studies, including radiation studies, will be completed before MCP construction starts.
- The MSP will be commissioned three months before the MCP.
- Bulk export facility upgrades for container handling will be finished two months after MCP completion, 29 months after FID.
- First monazite shipment of 200 containers (3,600t) anticipated 32 months after FID.





Monazite PFS Technical Summary and Outcomes

Monazite Project overview

The Monazite Project is an incremental enhancement of the Toliara Project outlined in the Mineral Sands DFS2

Mining and mineral sands processing unchanged from the Mineral Sands DFS2

The mine plan, tailings plan, WCP and MSP are unchanged from the Mineral Sands DFS2, save for the minor modifications to the MSP noted below.

The MSP for the Mineral Sands DFS2 was designed to direct monazite waste from the rutile and ilmenite processing streams to tailings for return to the mined-out pit void. The Monazite PFS considered the concentration of the waste stream to produce monazite and demonstrated that the MSP's monazite waste stream can be easily separated from the other waste and upgraded to a monazite product with 90% purity, with the following key additional or modified infrastructure identified.

Modifications to the MSP:

- Installing four RER magnets in the MSP to concentrate the monazite waste stream in a dry process.
- Implement a pumping system to transfer the concentrated monazite from the MSP to the MCP.

New Monazite Concentrator Plant:

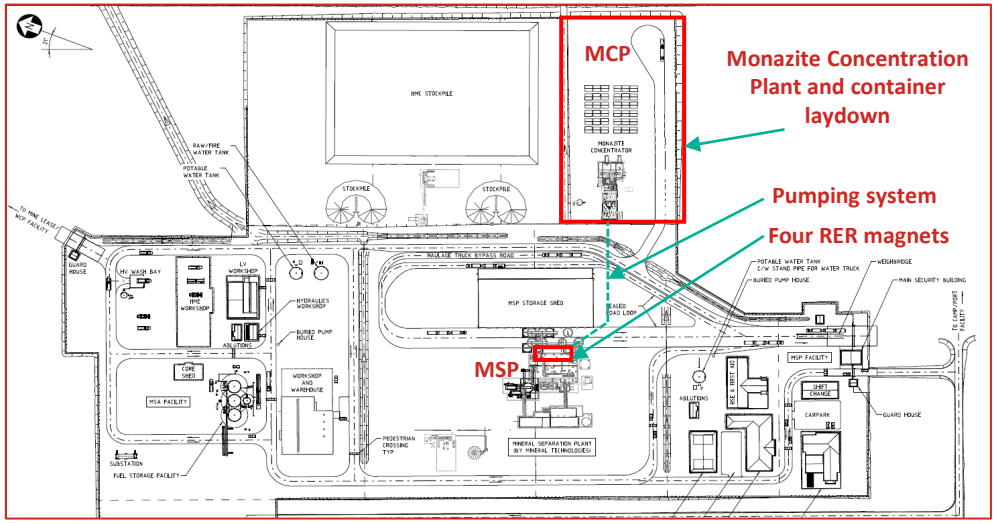
Construction of a MCP positioned adjacent to the HMC stockpile and separate from other structures for effective radiation management. The MCP will house wet and dry separation processes and monazite load out facility where the product is packed into plastic bag lined drums, and subsequently loaded onto pallets and into dedicated containers.

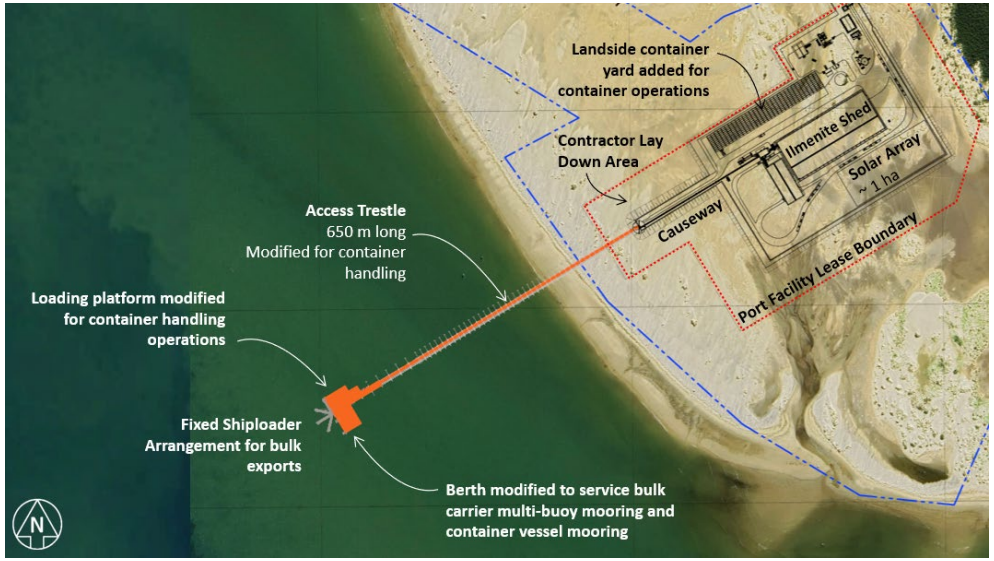
Modifications to the export facility for container handling:

- Construction of a container laydown area.
- Upgrading the jetty trestle structure and loadout platform to support container truck operations and enable container transfer to vessels.

Power:

- The hybrid thermal, solar photovoltaics (PV) and battery storage system power plant will require a slight enlargement. However, no additional infrastructure will be necessary.





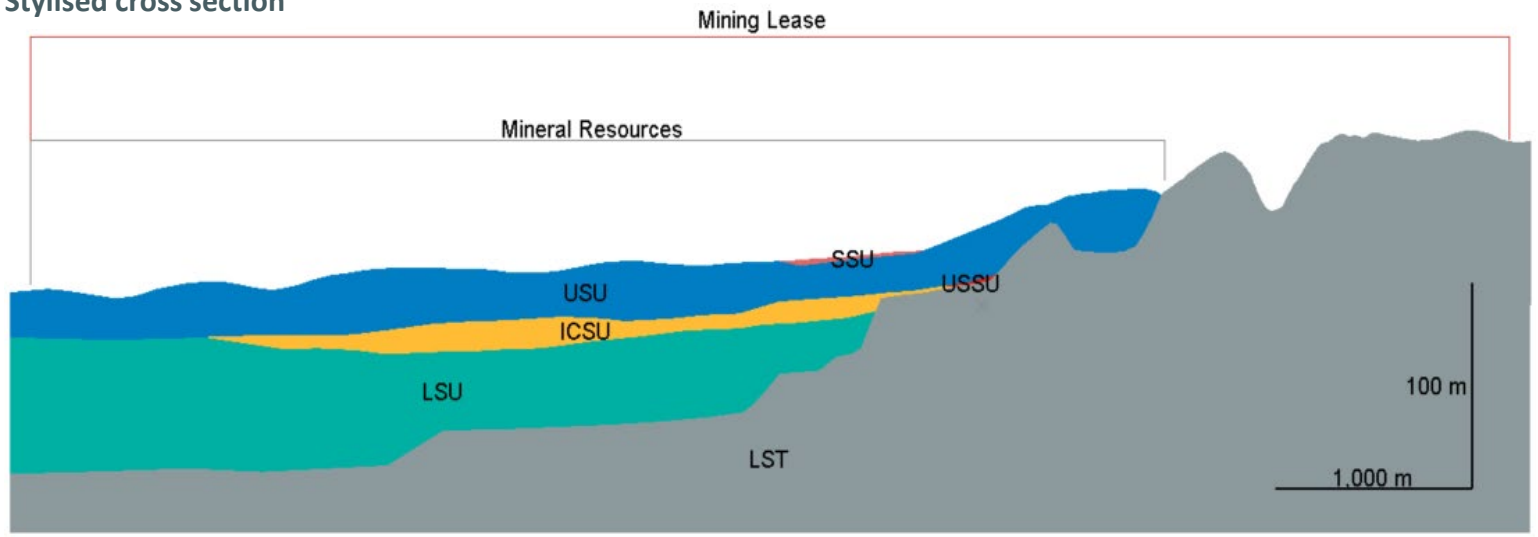
Geology

Located 45km north of the town of Toliara, the Ranobe deposit comprises five mineralised units

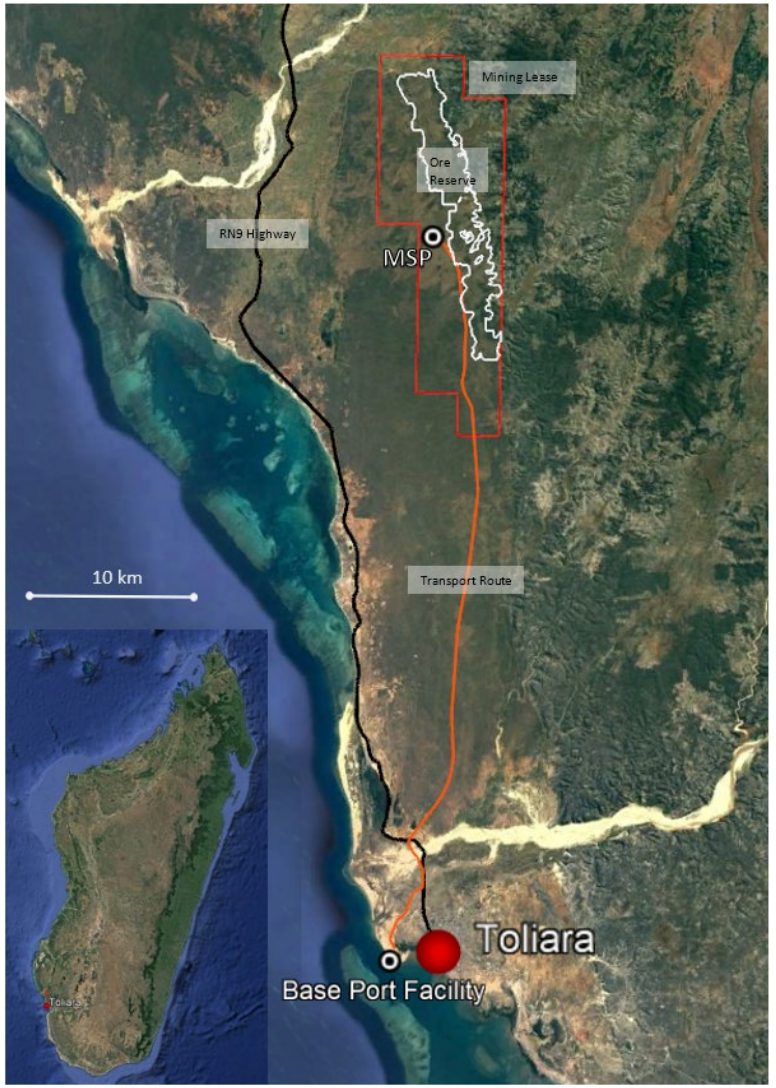
Deposit geology

- Upper sand unit (USU) - a well sorted, fine-grained, unconsolidated aeolian sand containing approximately 4% slime or clay (SL) and approximately 5% HM. The HM is primarily ilmenite, with secondary zircon, rutile, and **1.9% monazite**. The USU can also contain a surface silt unit (SSU) within broad topographical drainage features, and another silty sand unit (USSU) at the base of the USU profile.
- Intermediate clay sand unit (ICSU) - a thin unit of high slime content (25%) deposited in a low energy lagoonal environment with a dark red to orange brown sandy clay and clayey sand material averaging approximately 3% HM, which contains **~2.2% monazite**.
- Lower sand unit (LSU) - orange brown to yellow brown medium grained quartz sand with variable mineralisation and moderately low slimes content. The LSU is interpreted as a shallow marine or fluvial sediment that onlaps the limestone (LST) basement with HM primarily ilmenite and garnet, with secondary zircon. Preliminary analysis suggests the HM contains the presence of monazite but detailed mineralogy is yet to be completed**.**

Stylised cross section



Toliara Project location



Geology – Tenure & Mineral Resources

The JORC-compliant estimated Ranobe Mineral Resource is 2,580Mt at 4.3% HM, with monazite 2.0% of the mineral assemblage

Tenure

- The instrument providing tenure is *Permis d'Exploitation* 37242 (PDE 37242), which is a mining lease under Malagasy law. This was issued to Base Toliara on 23 October 2017 and remains valid.
- PDE 37242 expires on 20 March 2052 (40 years from the date of grant of the original mining lease). The lease can be renewed once for a period of 15 years.
- PDE 37242 provides the right to exploit ilmenite, zircon, leucoxene, rutile, guano, basalt, and limestone. PDE 37242 does not currently provide the right to exploit monazite.

Ranobe Deposit Mineral Resources estimate as at 27 September 2021*

						HM Assemblage as % of HM					
Category	**Tonnes (Mt)**	**HM (Mt)**	**HM (%)**	**SL (%)**	**OS (%)**	**ILM (%)**	**RUT (%)**	**LEUC (%)**	**ZIR (%)**	**MON (%)**	**GARN (%)**
Measured	597	36	6.1	4.3	0.2	74	1.0	1.0	5.9	1.9	2.2
Indicated	793	35	4.4	7.1	0.5	71	1.0	1.0	5.9	1.9	3.6
Inferred	1,190	39	3.3	9.7	0.6	69	1.0	1.0	5.8	2.0	4.3
Total	**2,580**	**111**	**4.3**	**7.7**	**0.4**	**71**	**1.0**	**1.0**	**5.9**	**2.0**	**3.4**

Ranobe Deposit Measured and Indicated Mineral Resources estimate as at 27 September 2021^

						HM Assemblage as % of HM					
Mineralised Unit	**M&I Tonnes (Mt)**	**HM (Mt)**	**HM (%)**	**SL (%)**	**OS (%)**	**ILM (%)**	**RUT (%)**	**LEUC (%)**	**ZIR (%)**	**MON (%)**	**GARN (%)**
Upper sand unit*	1,229	66	5.4	3.6	0.1	73	1.0	1.0	5.9	1.9	2.9
Surface silt unit*	12	0.5	4.2	18	0.6	71	1.0	0.9	5.8	2.0	4.1
Upper silty sand unit	13	0.8	6.3	23	2.3	72	0.9	0.8	6.5	1.5	4.4
Intermediate clay sand unit	136	4	3.0	24	2.0	68	1.2	1.1	6.1	2.2	3.4
Total	**1,390**	**71**	**5.1**	**5.9**	**0.3**	**72**	**1.0**	**1.0**	**5.9**	**1.9**	**2.9**

Tables subject to rounding differences. Mineral Resources estimated at 1.5% HM cut-off grade. ^Refer to the Appendices for estimates of the individual categories for the mineralised units. *Mineral Resources are reported inclusive of Ore Reserves

Geology – Ore Reserves

Mineral Sands DFS2 considered mining and processing the JORC-compliant estimated Ranobe Ore Reserves of 904Mt at 6.1% HM

- Estimated Ranobe Ore Reserves only include material from the USU and SSU.
- Mineral Sands DFS2 assumed the estimated Ranobe Ore Reserves are mined and processed, with the Monazite PFS then assuming the waste stream from the mineral sands processing is subject to concentration to produce monazite.
- The Ore Reserves estimate only includes mineral sands products in the HM assemblage. The estimate did not extend to monazite because the existing exploitation permit, PDE 37242, does not currently provide the right to exploit monazite.
- For this reason, it is the portions of the estimated Ranobe Mineral Resources in the Measured and Indicated categories that were converted to Proved or Probable Ore Reserves that underpin the production and forecast financial information for the Monazite Project.
- In this regard, the classification of the Ranobe Ore Reserves into Proved and Probable generally followed the Mineral Resources estimate classification – i.e. Measured Mineral Resources converted to Proved Ore Reserves and Indicated Mineral Resources converted to Probable Ore Reserves.

Ranobe Ore Reserves estimate as at 27 September 2021						HM Assemblage as a % of HM^			
Category	**Tonnes** (Mt)	**HM** (Mt)	**HM** (%)	**SL** (%)	**OS** (%)	**ILM** (%)	**RUT** (%)	**LEUC*** (%)	**ZIR** (%)
Proved	433	30	6.9	3.8	0.1	75	1.0	1.0	6.0
Probable	472	25	5.3	3.9	0.2	72	1.0	1.0	5.8
Total	**904**	**55**	**6.1**	**3.8**	**0.1**	**73**	**1.0**	**1.0**	**5.9**

Table subject to rounding differences

^ Monazite and Garnet excluded from the Ore Reserves estimate because PE 37242 does not currently provide the right to exploit these products.

*Recovered Leucoxene will be split between Rutile and Chloride Ilmenite products depending on product specification requirements.

Metallurgical testwork and flowsheet design

The process flowsheet for monazite was originally developed as part of the Mineral Sands Project studies

Mineral Sands Project studies testwork

- Extensive metallurgical test programs were undertaken for the Mineral Sands Project studies.
- These tests included an assessment of the viability of producing monazite with a minimum monazite content of 90% derived from the MSP's monazite waste stream.
- The monazite concentration flowsheet was developed using well-known separation technology.
- The testwork successfully produced monazite at an acceptable recovery of 80% and 82%, within expected industry norms.

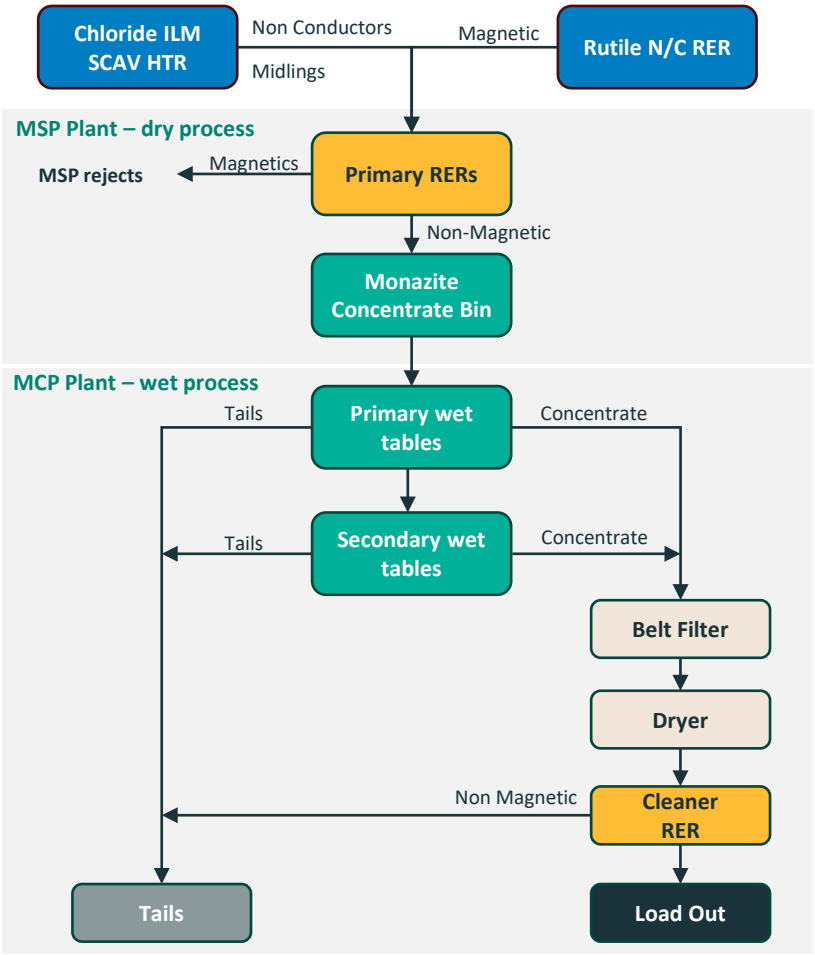
Monazite PFS testwork

- No further testwork was conducted for the Monazite PFS.
- However, approximately 65kg of remnant mineral sand samples from the Mineral Sands Project studies were used to successfully produce 8.5kg of a monazite product containing 90% monazite - identifying further optimisation potential to be investigated in the Monazite DFS testwork program.

Monazite concentration flowsheet

- The monazite waste stream from the ilmenite and rutile circuits of the MSP contains approximately 20% monazite and serves as feedstock for monazite concentration.
- Four new primary RERs will be installed at the back end of the MSP to concentrate the monazite waste stream. The RER output will then be pumped to the MCP.
- Wet tables in the MCP will further concentrate the monazite before a final set of cleaner RERs remove more non-magnetic waste to produce a 90% monazite product.
- The tails from the MCP will be pumped back into the mine void and diluted with WCP tailings.
- The monazite product will be classified as Dangerous Goods Class 7 Radioactive material and require dedicated storage, handling, ship loading facilities, and appropriate placarding during transport.

Monazite concentration flowsheet



Product recoveries

During the Mineral Sands Project studies an extensive suite of testwork was undertaken that provides a sound basis for product recovery estimation in the WCP, MSP and MCP. For the Monazite PFS, ~8.5 kg of 90% monazite product was produced on a subsequent pilot run using the flowsheet developed during the Mineral Sands Project studies

WCP

- Testwork on each of the low, medium and high-grade bulk samples was used to generate a model (by Mineral Technologies) from which the WCP monazite recoveries were estimated.
- High-grade scenario recoveries were assumed after further reducing the recovery by 1.5% to allow for plant operations not being run continuously at peak conditions. The average monazite recovery in the WCP was established at 90.9%.

MSP

- Monazite recovery was derived from the MSP testwork and calculated on a circuit-by-circuit basis, an average total recovery (from 3 bulk samples processed) of 96.57% was established.

MCP

- Monazite recovery was derived from the MCP testwork and calculated on a circuit-by-circuit basis, an average total recovery of 81.09% was established.
- Due to a lack of sample availability, optimisation of the flowsheet was not completed. During the Monazite DFS and following LOS, a fresh bulk sample will be collected from the Project to conduct optimisation test work.

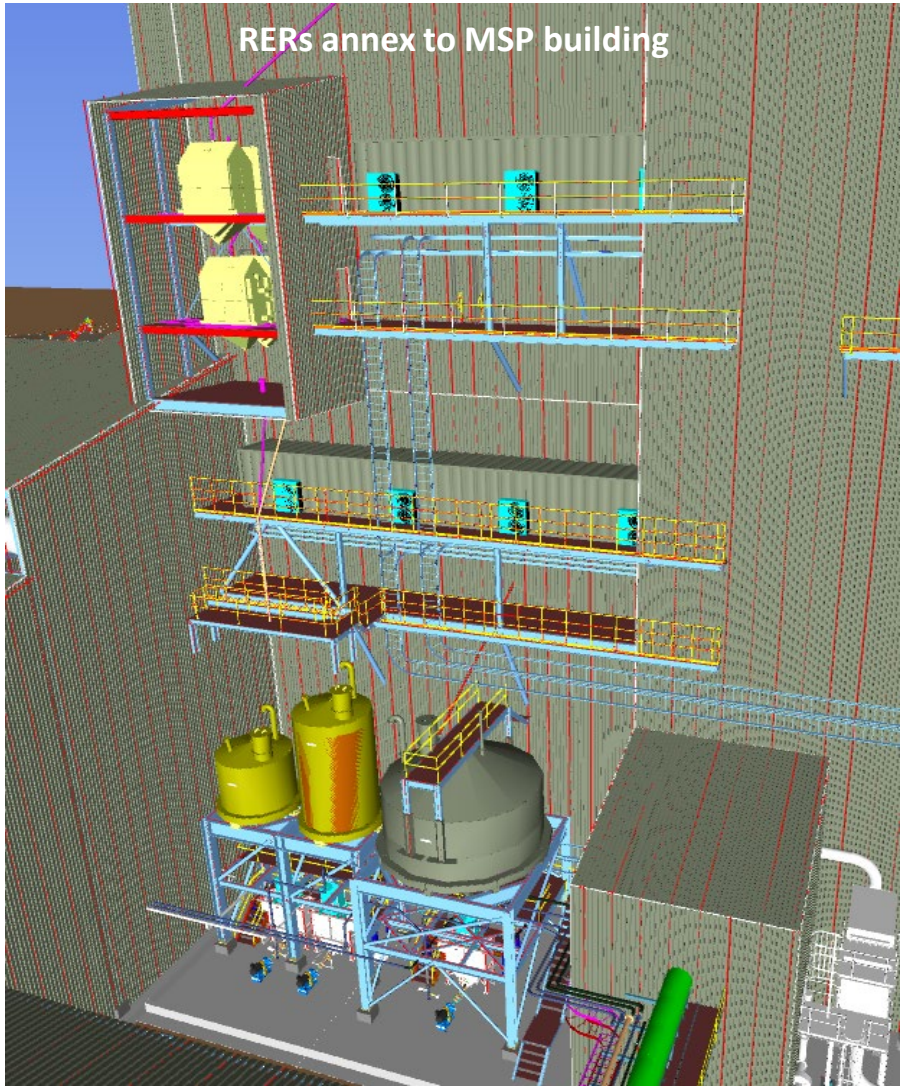
Processing Plant	Monazite Recovery
WCP	90.90%
MSP	96.57%
MCP	81.09%
Combined MSP + MCP	78.31%

Process plant layout - MSP

To reduce the volume of material pumped to the MCP, an initial dry concentration stage will be performed in the MSP

MSP modifications required

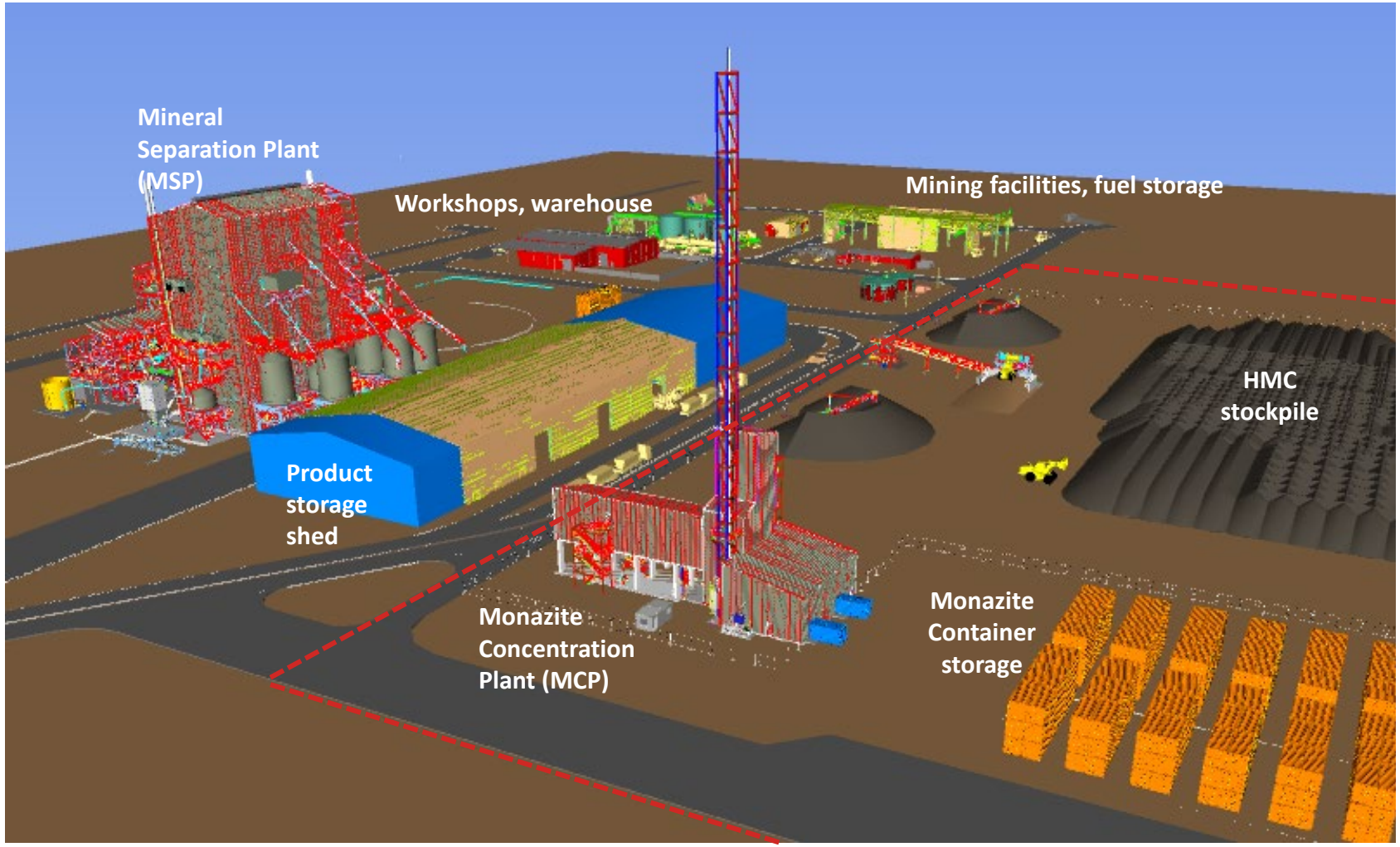
- The initial phase of monazite concentration will take place at the MSP, where four RER magnets externally installed will be used to separate waste from the monazite, consequently decreasing the volume of material transferred to the MCP by about 85%.
- Process waste material will be diluted and disposed of in the mined-out pit void.
- Upgraded monazite is converted into a slurry for pumping to the MCP for further processing.
- Commissioning of the MCP is scheduled for three months after the MSP. During this phase, the monazite concentrate produced at the MSP will be redirected back into the pit along with the MSP's other waste. Collecting it in a stockpile for later process at the MCP would require an estimated US$4 million capital expenditure and also potentially create environmental concerns related to dust control and community perception.



Process plant layout - MCP

The MCP will be located ~250 meters from the MSP, mitigating employee radiation exposure risks and facilitating integration with any future refinery and/or separation plant

- The MCP will be constructed adjacent to the HMC stockpile, maintaining a safe distance from other infrastructure to enhance safety protocols.
- Comprehensive security measures will be implemented, including fencing and access controls.
- MCP stages include gravity separation on wet tables and magnetic separation using RERs to concentrate the monazite into a final saleable product.
- A specialised drum loading facility will pack and store monazite using specialised steel drums, pallets, and containers.



Process engineering

The Monazite Project process flow includes initial dry concentration in the MSP, then pumping of concentrated monazite to the MCP where two stages of wet gravity separation utilise shaking tables before final enhancement via cleaning RER magnetic separators

MSP components

- RER magnets will process an average of 263ktpa feed material (monazite waste stream), removing 85% before the concentrated monazite is pumped to the MCP.

MCP components

- Includes a wet plant, dry building, and drum loading facility.
- MCP feed rate of up to 4.2tph (Stage 1) and 6.1tph (Stage 2) to yield an average 21.8ktpa monazite.
- Will utilise gravity and magnetic separation principles from MSP, with no new processing equipment types introduced.

MCP exhaust stack

- The MCP's exhaust stack height will be required to be 1.5 times taller than the nearest structure within 800 meters.
- With the MSP's height at 52 metres, the MCP's stack must be ~80 meters tall to comply with environmental standards.

Infrastructure required

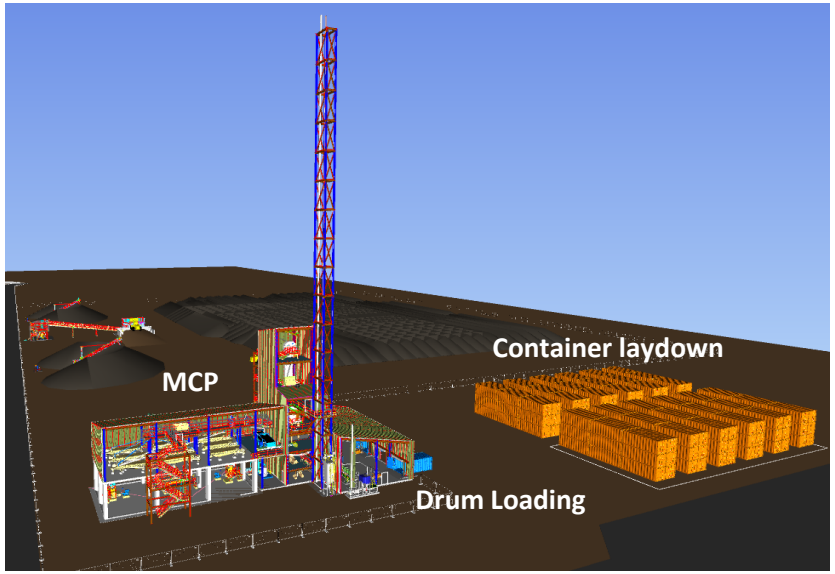
- Container laydown area for 500 containers on a 300mm concrete pad.
- Security fencing and access controls around MCP and HMC stockpile, with both classified as “restricted” areas.

Waste management

- MCP tailings will be combined with MSP tails and pumped for co-disposal with WCP sand tails back to the mined-out pit void.

Drum loading

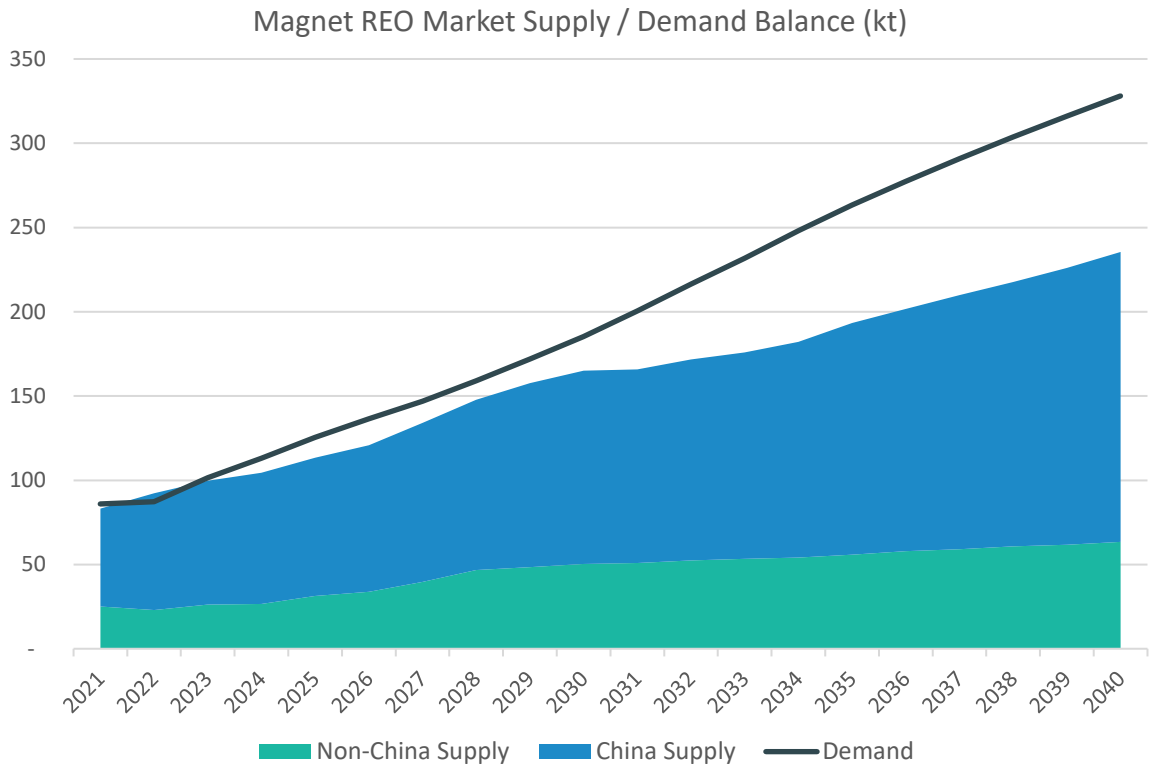
- Monazite will be loaded into plastic bag lined, steel drums. The plastic bag will be sealed then the drum will be sealed. Each drum will hold one tonne of monazite.
- Drum loading modules have been successfully used in the uranium industry for many years.
- The module will automatically fill, sample, label, seal and wash the drums without operator intervention.
- Product loadout area will have access to two containers (one with empty drums, one to receive full drums).
- 18 drums will be loaded into each container = 18 tonnes of monazite per container.
- Trucks can unload and take full containers from the same location.

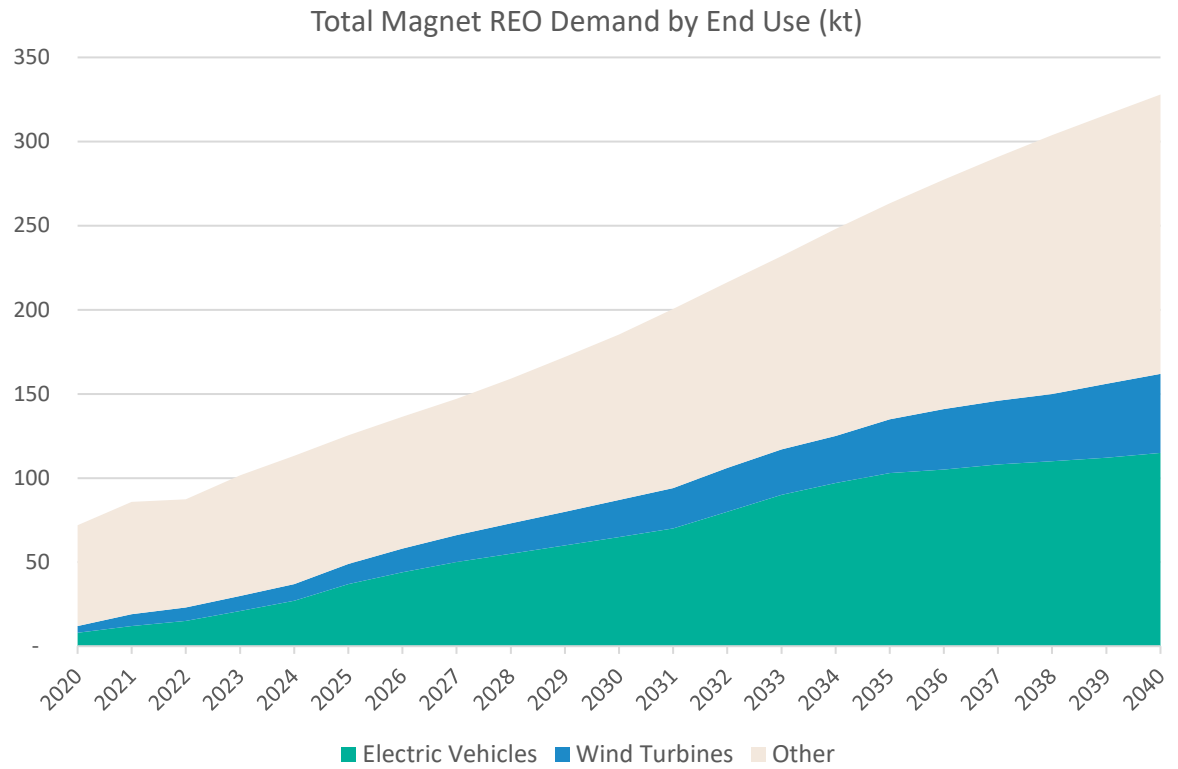


Market supply and demand outlook

Forecast REO demand growth for use in permanent magnets - electric vehicle motors and direct drive wind turbines - is very strong and supply is constrained

- The market outlook for REOs is very positive as forecast demand growth for use in permanent magnets (mostly for electric vehicle traction motors and direct drive wind turbines) is strong and supply of REO minerals is constrained. The magnet REOs (Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy) and Terbium (Tb) oxides) are typically the driver for rare earths projects.
- Supply/demand forecasts are for an increasing supply deficit for the magnet REOs, as shown in the chart below.
- A push by western countries to develop an alternative supply chain to China for REOs (as critical minerals) is likely to exacerbate the supply shortage in the non-China market.
- Monazite from the Toliara Project has flexibility to be sold into the existing large China market or emerging non-China REO supply chains.



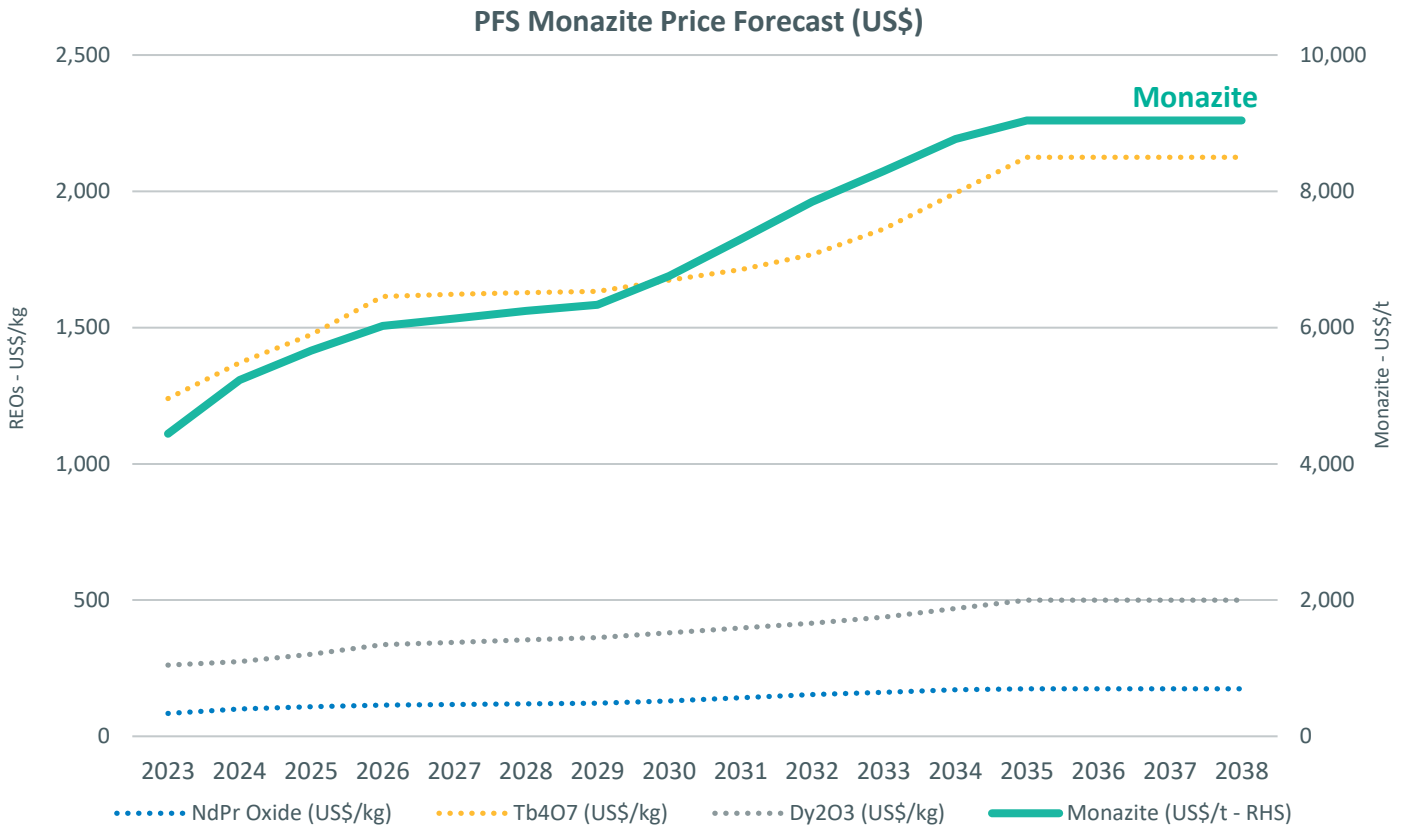


Source: Adamas Intelligence's 'Rare Earth Magnet Market Outlook to 2040' report (Q2 2023)

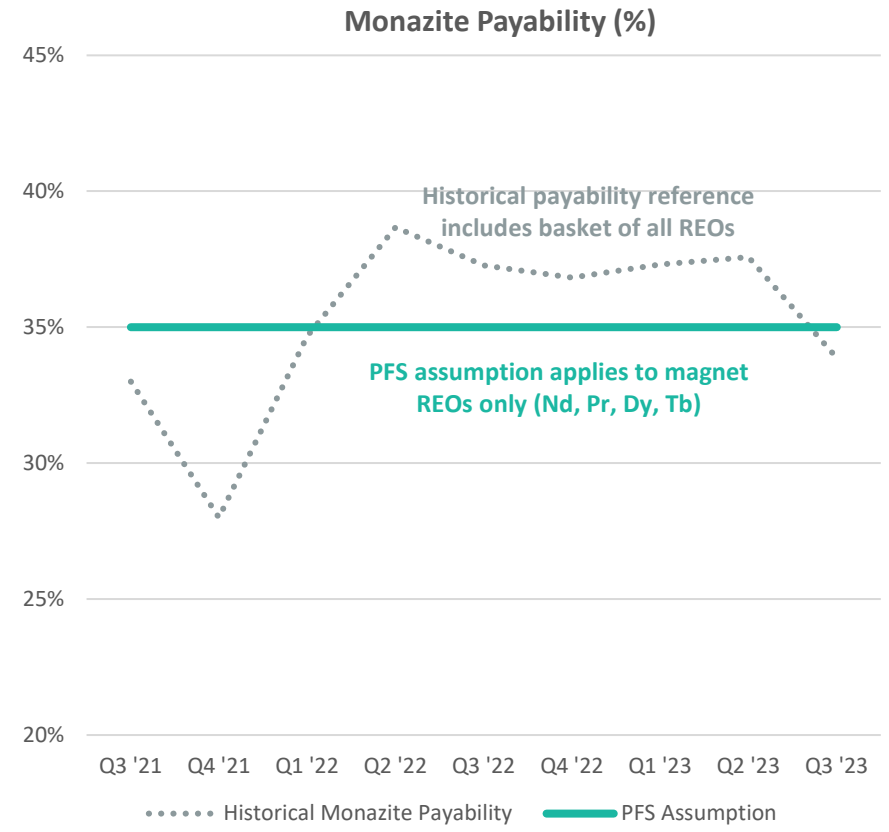
Marketing – price forecast

The forecast supply deficit for permanent magnet REOs underpins an attractive pricing outlook for monazite as a key feedstock for REO refining

- A typical monazite with ~60% TREO has historically been priced in the market at 30-40% of the total value of the contained basket of REOs (referred to as the 'payability ratio'). The chart on the right demonstrates that in recent times this percentage range has been averaging between 35% and 40%.
- Base Resources' internal forecast for the Toliara Project's monazite price assumes that an average payability ratio of 35% will apply and only the magnet REOs (ie Nd/Pr and Dy/Tb oxides) will be 'payable'. The magnet REO prices used in Base Resources' internal forecast are those published in the Adamas Intelligence Q4-2023 long-term price forecast (net of VAT) through to 2035, then kept flat at those 2035 levels for the long term (rather than continuing to increase as per the Adamas Intelligence forecast).



Source: Adamas Intelligence's 'Rare Earth Pricing Quarterly Outlook' (Q4 2023)



Source: Adamas Intelligence's 'Rare Earth Minerals Monthly' subscription-based reports

Marketing – Toliara magnet REOs 24.5% of total

Toliara monazite contains an REO assemblage that is rich in the high-value REO magnet elements and compares favourably with other projects

- Sample analysis indicates the Toliara Project's monazite has a grade of 59% TREO.
- As is typical with REO minerals, most of the REO content is in the form of the much lower value light rare earths Cerium (Ce) and Lanthanum (La) - combining for a total of ~70% of the Project's TREOs.
- The REO minerals valued for use in the production of rare earth magnets – widely used in electric motors – are Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy), Terbium (Tb). Toliara's TREOs are ~ 23.8% Nd/Pr oxides and ~0.7% Dy/Tb oxides.

	Distribution of Elemental Oxides											
	Lanthanum	Cerium	**Praseodymium**	**Neodymium**	Samarium	Europium	Gadolinium	**Terbium**	**Dysprosium**	Yttrium	Others	**Total**
Asset Name	La_2O_3	CeO_2	Pr_6O_{11}	Nd_2O_3	Sm_2O_3	Eu_2O_3	Gd_2O_3	Tb_4O_7	Dy_2O_3	Y_2O_3		
Toliara Project	**22.90**	**46.40**	**5.20**	**18.60**	**2.90**	**0.10**	**1.50**	**0.20**	**0.50**	**1.60**	**0.20**	**100.0**
Mt Weld	23.90	47.60	5.20	18.10	2.40	0.50	1.10	0.10	0.30	0.80	0.00	100.0
Browns Range	2.01	4.98	0.71	3.24	2.17	0.45	5.77	1.30	8.71	58.29	12.37	100.0
Yangibana	11.20	41.70	8.00	32.60	3.30	0.70	1.40	0.10	0.30	0.60	0.10	100.0
Dubbo	22.08	36.28	3.63	14.11	1.72	0.05	1.64	0.21	1.87	15.80	2.61	100.0
Eneabba	21.80	45.00	4.60	16.60	2.50	0.10	1.40	0.20	0.90	5.60	1.30	100.0
Wimmera	17.70	37.40	4.00	16.10	2.70	0.10	2.30	0.30	2.00	14.20	3.20	100.0
Balranald	20.80	45.50	4.90	16.60	3.00	0.00	2.00	0.20	1.00	5.00	1.00	100.0
Ngualla	27.61	48.24	4.77	16.46	1.60	0.29	0.61	0.04	0.07	0.01	0.30	100.0
Mountain Pass	32.60	49.90	4.30	12.10	0.90			0.00	0.00		0.20	100.0

Disclosures in respect of the REO assemblages of other projects reflect prior public disclosures by the relevant company. Refer to the Appendices for details about the owners of the projects, their stage of development, location and Mineral Resources and Ore Reserves and the specific sources for the above REO assemblages.

Marketing – sales logistics and product quality

Toliara Project monazite is a good quality REO source mineral that has the flexibility to target a developing customer base in western countries or the established large China market. Sales logistics constraints due to the radiation levels contained within the product are a key consideration in monazite exports. Base Resources will adopt industry-leading practices to ensure maximum safety and compliance with all relevant regulations

Logistics

- Toliara Project monazite will be categorised as Class 7 Dangerous Goods (Class 7) due to the levels of contained radioactive material and require specialised handling, storage and distribution.
- Dedicated shipping containers will be purchased for use for the storage and shipping of all Toliara Project monazite.
- The monazite will be loaded into sealed steel drums, packed directly into the shipping containers and stored at a designated external storage area at the Toliara export facility.
- Class 7 radioactive cargoes require a dedicated vessel (i.e. sharing with other cargo on board a vessel is not permitted). Base Resources will charter the most suitable sized multi purpose vessels to carry its cargo to target customers. The Base Resources owned containers will be shipped back to Toliara on a separate vessel charter once the customer has unloaded the entire cargo of drums from the received containers.
- The cost of a dedicated vessel to customer destinations for this type of cargo is significant and largely dependent on the number of containers loaded. On a cost and operational complexity basis, and where there are no constraints in regard to destination port and transport infrastructure, the optimal shipment size is considered to be 500 containers with 20 tonnes of product in each (total of 10,000 tonnes).
- Conservatively, to factor in potential limitations of ports and transport infrastructure in western markets, the Monazite PFS has assumed smaller shipment sizes of 200 containers with only 18 tonnes per container – for a total of 3,600 tonnes per shipment.

Indicative Toliara Monazite Product Quality Specification*

Product weight (%)	
TiO_2	1.30
Fe_2O_3	0.51
SiO_2	2.28
MgO	0.20
MnO	0.08
ZrO_2	2.16
P_2O_5	27.10
U	3,190 ppm
Th	88,800 ppm
V_2O_5	0.05
Nb_2O_5	0.06
CaO	1.22
SO_3	0.11
K_2O	0.03
CeO_2	27.70

Contained RE elements (ppm)	
Ce_LA	217,000
Dy_LA	2,400
Er_LA	524
Eu_LA	243
Gd_LA	7,110
Ho_LA	306
La_LA	107,000
Lu_LA	17
Nd_LA	86,900
Pr_LA	24,200
Sm_LA	13,300
Tb_LA	694
Tm_LA	44
Y_LA	7,450
Yb_LA	173

*This indicative product quality specification was based on producing a 90% monazite product at a grade of 59% Total Rare Earth Oxide (TREO) as part of flowsheet development for the Mineral Sands Project studies. The distribution of elemental oxides of the TREOs is shown in the comparison table on the prior slide.

Infrastructure – onshore

The Mineral Sands Project infrastructure, including bulk water, power, offices, workshops, stores, accommodation camp, sewerage and water treatment plants, will support the Monazite Project

Bulk water

- The Mineral Sands Project maximum water demand for stage 2 will be 976m³/hr (inclusive of 10% contingency). The additional water demand for the MCP will be 35m³/hr. This will be able to be supplied by the planned nine operating and two standby bores for the Mineral Sands Project.

Bulk power

- The Mineral Sands Project maximum power demand is 15MW. Power for the mine site will be "self-supplied", with the generation facility to be constructed by an IPP who will in turn operate and maintain that facility on Base Toliara's behalf. The additional ~450kW required for the MCP will require a small increase in available power.

Accommodation

- There are no additional accommodation requirements for the MCP construction as it will commence when the Mineral Sands Project construction manning reduces sufficiently to accommodate the MCP needs.

Road and bridge

- No changes to the haul road or Fiherenana River bridge are required to accommodate the planned transport of three loaded containers per day to the export facility and the return of empty containers to the mine site.

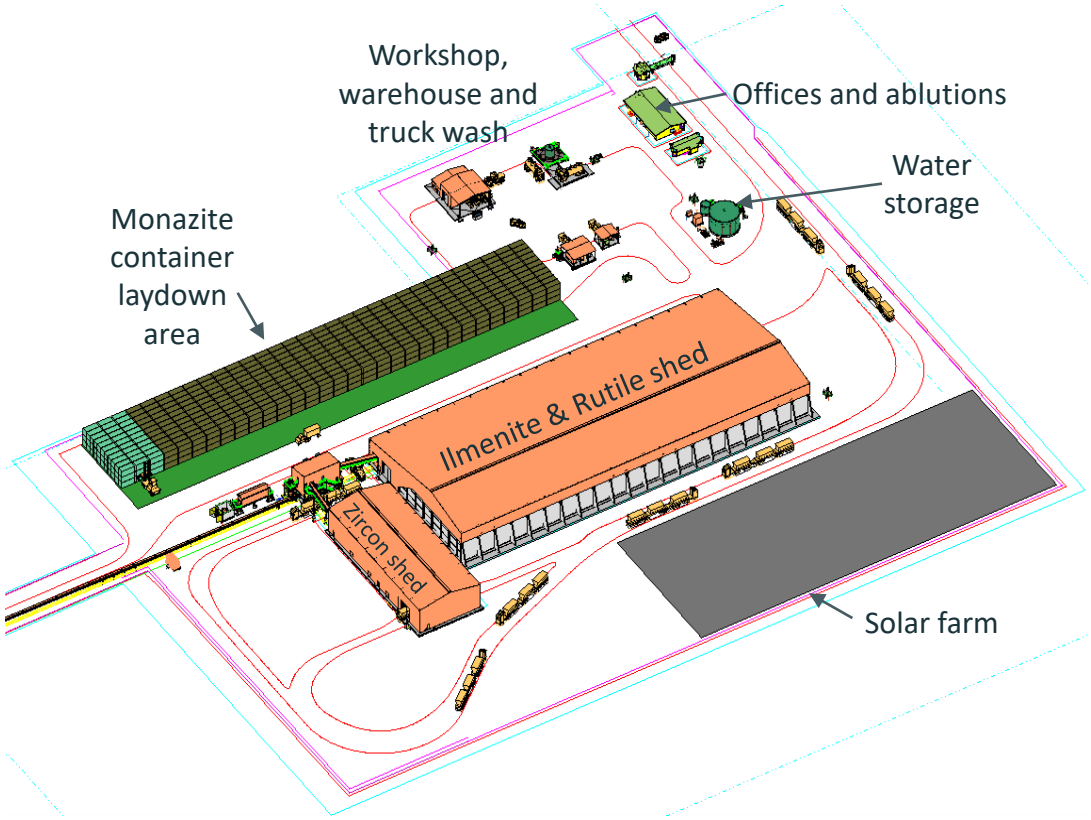
Water treatment and sewage plants

- The water and sewage treatment plants designed for the Mineral Sands DFS2 have sufficient capacity to meet the additional requirements of the MCP.

Export facility – additional scope onshore

- Minor modifications to the planned layout will accommodate a container storage area catering for up to 550 loaded and 550 empty 20-foot (TEU) containers, which two dedicated container-handling forklifts will manage.

Toliara Project Export Facility - Onshore

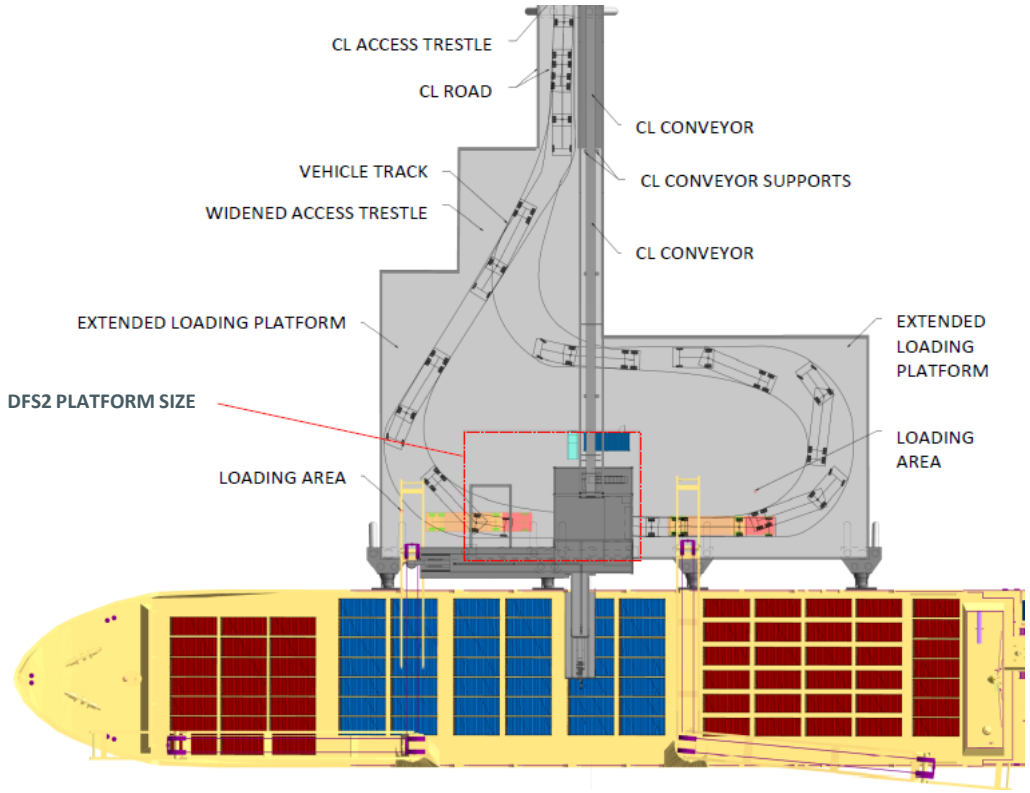


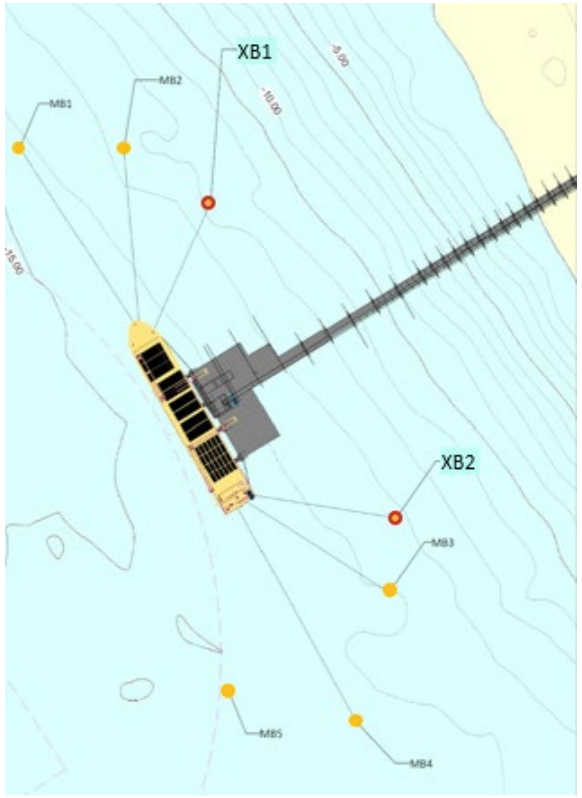
Infrastructure – offshore

The bulk export facility will be modified to manage the shipment of monazite in containers, with vessel loads ranging from 100 to 500 containers

Export facility

- The marine portion of the export facility will require modification to handle containerised monazite. The current jetty access lane is designed for light traffic only and will require upgrading of the accessway concrete deck to permit truck and container loads. The supporting piles will not require upgrading.
- The current loading platform will require an extension to accommodate the truck turning circle and access to the vessel's cranes for container unloading and loading.
- Two additional mooring points and protective dolphins/fenders will be required to permit vessel berthing against the loading platform to enable the vessel's cranes to be used for container loading and offloading.



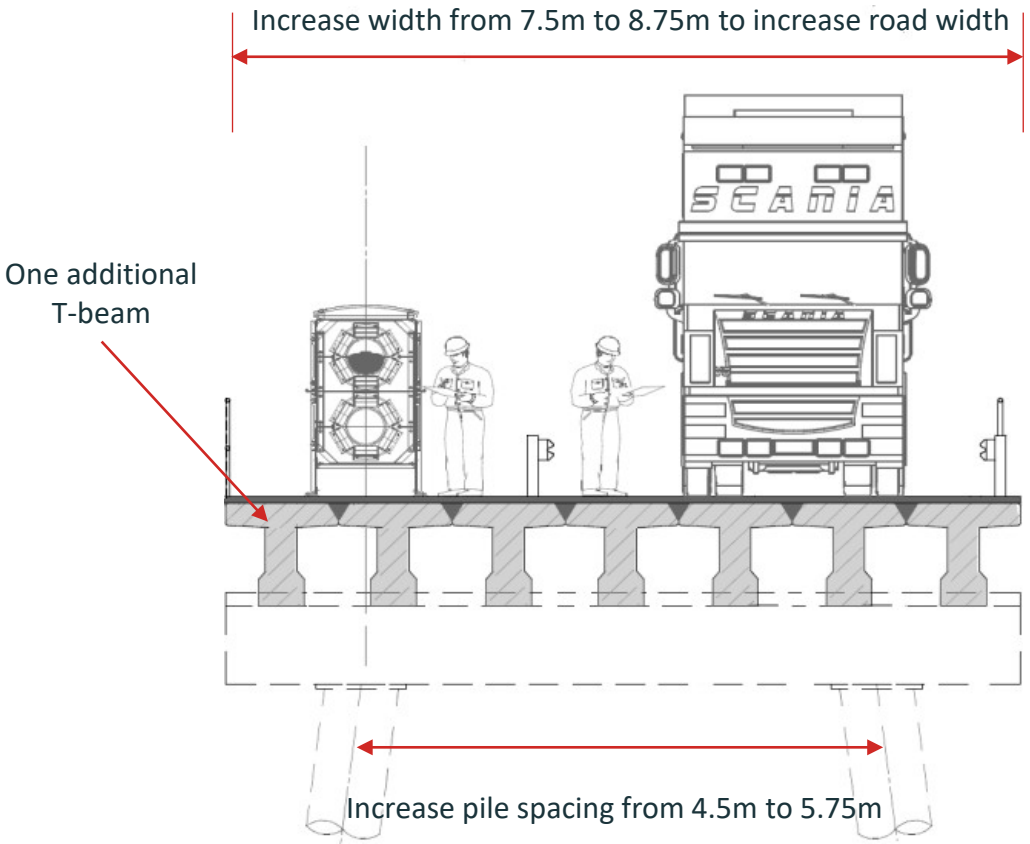


Buoys XB1 and XB2 are additional buoys required to accommodate breast lines from the container vessel. The breast lines assist in keeping the vessel securely moored against the fenders.

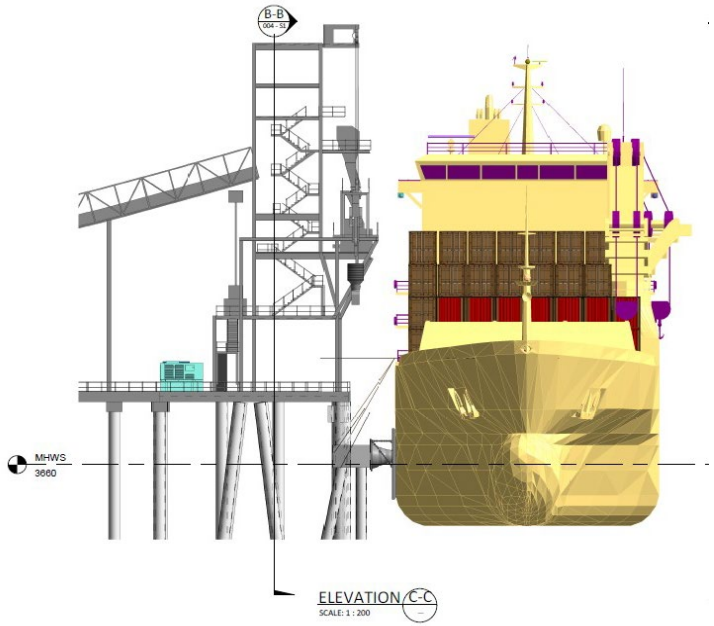
Infrastructure – offshore

Discrete event modelling, mooring studies and preliminary designs have confirmed that the Mineral Sands Project jetty can be modified to permit container loading and unloading

- Discrete event modelling was completed on all container movement and loading activities.
- The bulk export access trestle will be widened by 1.25 meters to accommodate trucks transporting containers to the ship loading platform.
- One passing bay is included in the ~600m long access trestle (width at this section 13.5m) which optimises truck cycle rates.



- Operationally, there will be sufficient berth availability to accommodate the arrival of expected vessels that can handle between 100 and 500 containers per shipment.
- The arriving vessel berths alongside the platform. Two tugs are required for this operation, with the existing Toliara port tug expected to be available to supplement the single tug included in the Mineral Sands DFS2.
- The bulk shiploader boom will be in the stowed/secured position with the boom down and parallel to the fender line. Once berthed, the boom will be placed in a central and fully raised position to give clear access for the ship's cranes to operate.
- Minor modifications will be required to the shiploader structure and storm condition support for the shiploader boom.



Project implementation

The Monazite Project will be integrated into implementation of the Mineral Sands Project to obtain the benefits of continuity of consultants, contractors and personnel, which includes reduced cost and risk, and produce monazite as soon as possible without impacting the Mineral Sands Project schedule

Implementation strategy

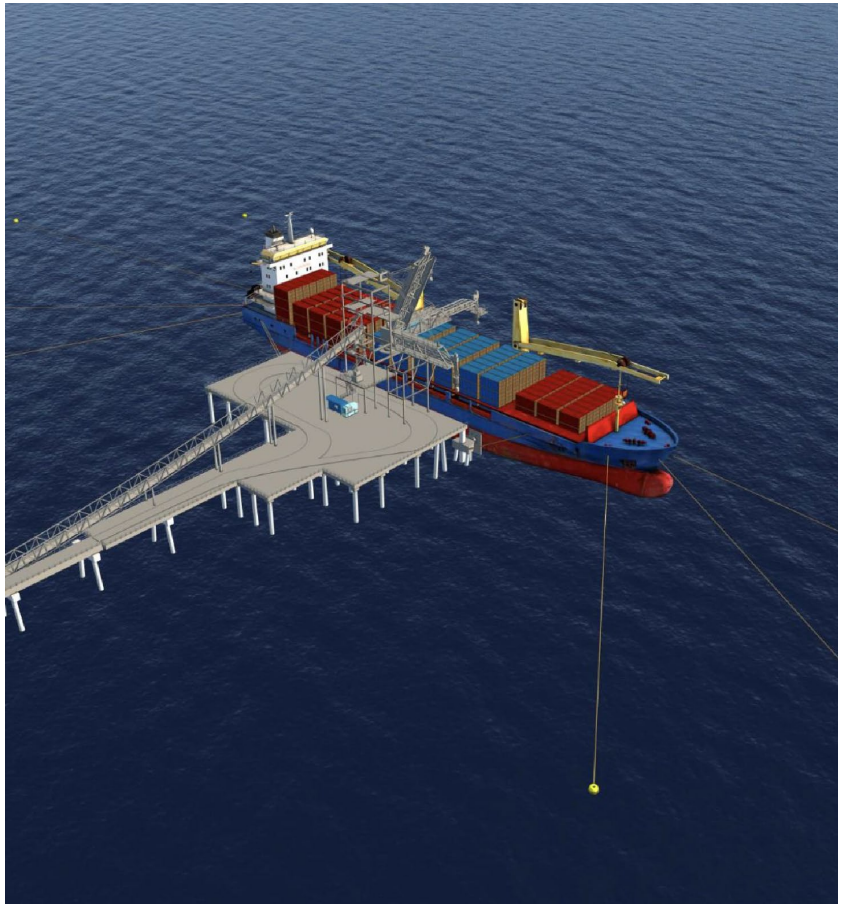
- The strategy will integrate all the Monazite Project design and construction activities with the Mineral Sands Project, capitalising on the continuity of consultants, contractors and staff. This integration aims to decrease costs and risks while increasing revenue through acceleration of the production of monazite, but without disrupting the Mineral Sands Project timeline.

Monazite Concentrator Plant

- The construction of the MCP will strategically utilise contractors from the MSP, commencing approximately 12 months after commencement of MSP construction. This approach ensures continuity of expertise and disciplines; for instance, the same civil contractor will transition to the MCP plant's civil requirements upon completion of the MSP's civil works.
- Using the MSP contractors for MCP construction will also reduce mobilisation costs. The contractors familiarity with Base Resources' standards and procedures will also reduce the risk of injury or incidents.
- Commissioning of the MCP is scheduled for three months after the MSP. During this phase, the monazite concentrate produced at the MSP will be redirected back into the pit along with the MSP's other tailings. Collecting the MSP monazite concentrate in a stockpile for later process at the MCP would require additional capital expenditure and also potentially create environmental and occupational health and safety concerns related to dust control.

Export facility modifications

- The export facility construction is on the critical path of the Mineral Sands Project and presents a complex mix of interfacing and battery limits between the various contractors.
- The Mineral Sands Project marine contract will be expanded to include modifications to the export jetty and platform to accommodate container exports. Integrating this work into the existing contract scope avoids contractor overlap and minimises the risk of duplicated efforts or missed tasks.
- Modifications required for exporting containers via the marine facilities will be included in the 'best and final offers' scope. The design aspects of these modifications will also be included.



Human resources

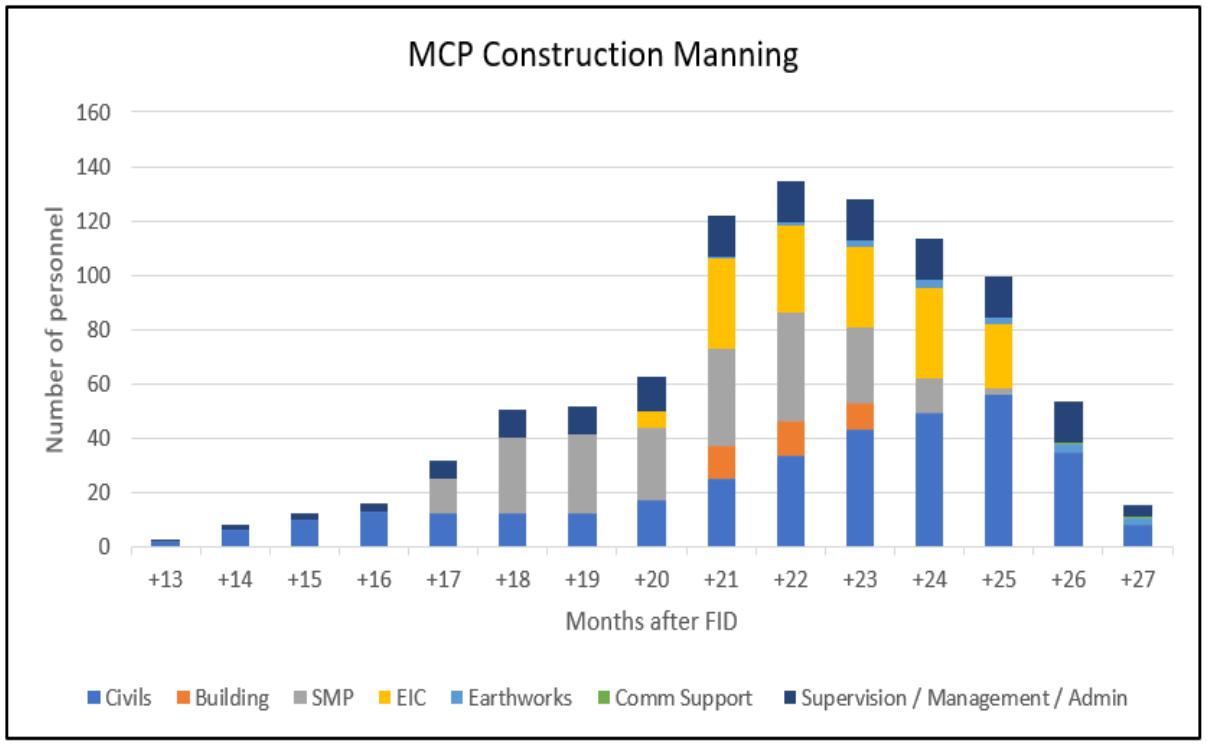
The Toliara Project operations team will expand, adding 16 MCP operators and four forklift drivers at the export facility to support monazite production and container exports. A total of 134 personnel will be recruited for the MCP construction phase

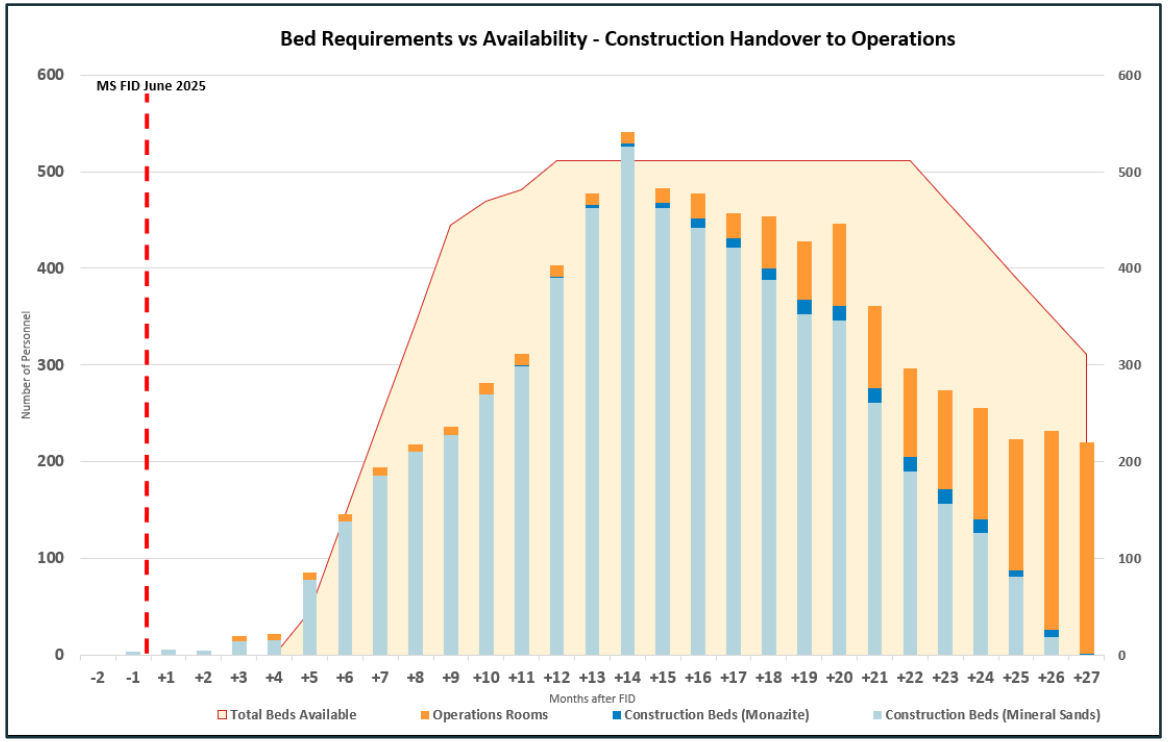
Construction manning

- The peak requirement for the MCP construction phase is projected to be 134 personnel in month 22 (FID +22 months).
- Construction of the export facility will require an additional 30 personnel.
- The existing accommodation camp can house the additional construction staff. However, local hotels have been identified to provide overflow accommodation (estimated for 1 mth).

Operations manning

- Only 16 MCP operators and four forklift drivers are forecast to be required.





Operations and safety - radiation

While the radiation levels in the ore are insufficient to warrant a radioactive classification, these levels rise during monazite concentration. Consequently, industry standard control measures will be implemented to safeguard personnel at the MSP, MCP and export facility

Radiation risk

Radiation exposure occurs through three pathways – external gamma radiation, ingestion and inhalation. Exposure to external gamma radiation is managed through good design and operational controls. Exposure through ingestion is managed through good occupational hygiene procedures and practices. Inhalation is the most likely source of radiation exposure (breathing in radon/thoron and dust containing radionuclides) and is managed through good design, procedures and use of PPE. Health risks result from exposure – high exposure results in high doses which increase risk.

Radiation Management Plan

A radiation safety expert was engaged to assess the processing and transport of monazite, potential exposure pathways and associated radiation risk to personnel. A preliminary Radiation Management Plan (RMP), based on Good International Industry Practice (GIIP) has been developed and is designed to proactively address, monitor, and manage radiological risks and impacts throughout the operational lifespan. The RMP specifies measures that must be enacted to manage radiation exposure, mitigate risk and monitor radiation exposure.

Radiation controls

The following operational controls are detailed in the RMP and will be implemented:

- Classification of workplaces as unsupervised, supervised, controlled and restricted.
- Assessment against baseline (natural) background radiation levels.
- Implementing occupational and environmental radiation monitoring programs, focusing on:
  - Gamma radiation contamination.
  - Radon/Thoron monitoring.
  - Dust monitoring.
  - Water, soil and sediment testing for radionuclides.
  - Stack emission testing for thorium and uranium content.
- Work permit system for minimising and monitoring personal radiation exposures in relevant areas.

Training

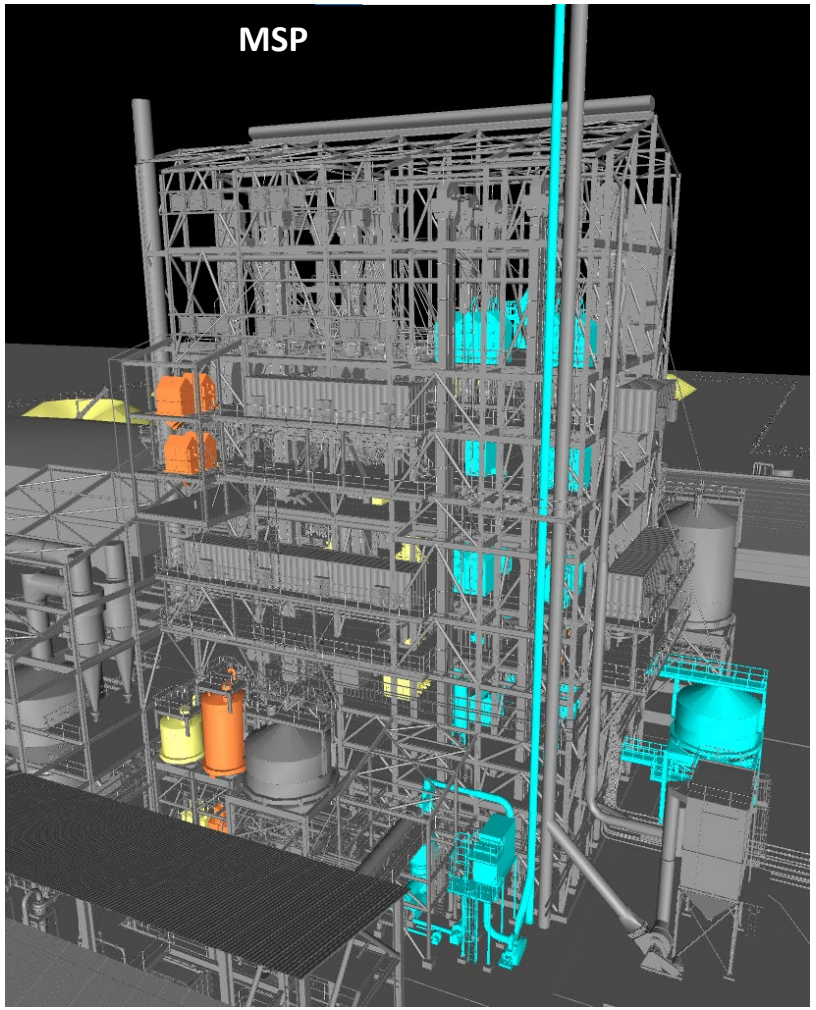
- Comprehensive radiation protection training material will be developed, covering:
  - Radiation exposure pathways, sources of radiation exposure and health risks.
  - Control measures for managing exposure and minimising risk and impact to employees and the environment.
  - Personal exposure in different areas and management controls of each plant area.
  - Principles and process of occupational and environmental radiation monitoring.
  - Details, analysis, assessment against baseline levels, and interpretation of occupational and environmental radiation monitoring outputs.
- Full induction training in radiation management and protection will be carried out for all workers upon commencement and annually thereafter.
- Short-term contractors and/or visitors will attend a training course in radiation management and protection before they commence any work on-site.

Record keeping

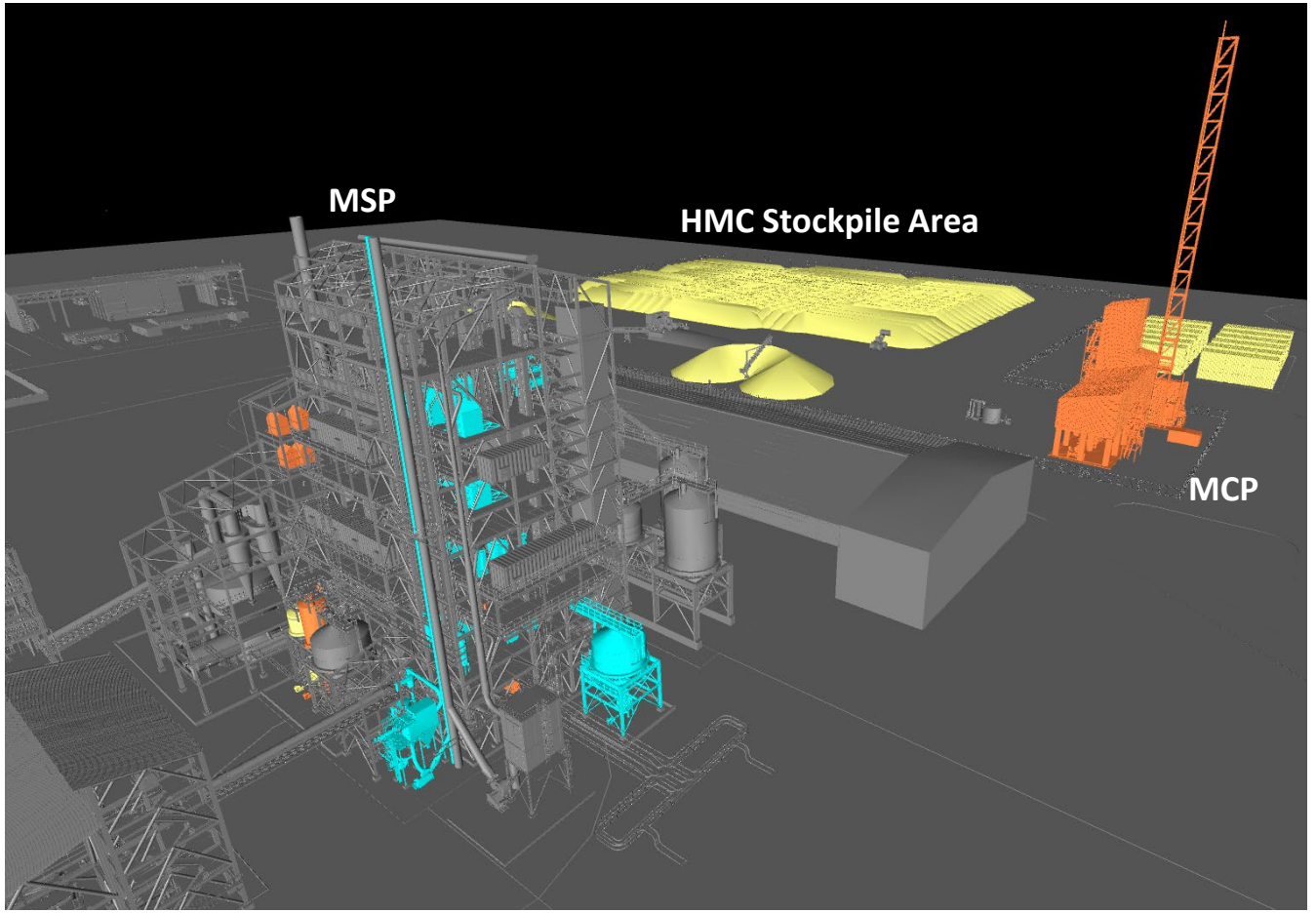
- Record keeping system will be implemented to capture:
  - Personal radiation exposure.
  - Occupational and environmental monitoring results.
  - Analysis and assessments of background radiation levels.
  - Equipment decontamination records.
  - Inspections and audits, including audits by external specialists.
  - Records of tailings deposition – tonnages and uranium and thorium concentrations.
  - Training records.

Operations and safety – radiation

Based on varying exposure levels, plant areas are classified as one of four categories, with specific management controls implemented for each category



Unsupervised | Supervised | Controlled | Restricted



Operations and safety - radiation

Based on varying exposure levels, plant areas are classified as one of four categories, with specific management controls implemented for each category

Classification	Exposure Level (mSv/annum)	Location	Management Controls
Unsupervised area	< 1	• WCP • Majority of MSP	• No specific controls required.
Supervised Area (SA)	>1 and < 5	• Zircon circuit • Rutile circuit • Export facility zircon stockpile	• Potential high-exposure zones—exceeding weekly exposure limits over 40 hours. • No special radiation control procedures are required. • Restrict access to essential personnel; ensure supervised visits for all others. • Mandatory instructions on radiation hazards for all entering the area are not required • Clearly mark and communicate boundaries to all plant employees. • Continually review working conditions within the area.
Controlled Area (CA)	> 5 and < 15	• HMC stockpile • Zircon conductor rejects • MSP HiTi concentrate • Export facility container storage area	• Provide written instructions detailing radiation hazards and safety procedures for specific tasks within the CA. • Develop and implement detailed work practices to manage radioactive materials and keep exposure to the lowest practicable levels. • Restrict access to necessary personnel; enforce supervised visits for non-workers. • Clearly mark boundaries. Designate and demarcate non-CA zones for eating, drinking, and smoking. • Provide facilities for personnel to wash hands and faces before exiting the CA; shower facilities may also be required. • Prohibit removal of contaminated clothing from the CA without monitoring; establish laundering services or consider disposable or waterproof clothing options for routine contamination.
Restricted Area (RA)	> 15	• MSP monazite concentrate bin • MCP	• Highly regulated access. • Minimize time spent in RAs and ensure all procedures are performed by skilled personnel under direct or remote supervision. • Establish where high concentrations of thorium (>0.3% or 3,000 ppm) and uranium (>0.13% or 1,300 ppm) are present. • Rotate employees with potential radiation exposure approaching 20 mSv/year to other sections of the plant, like WCP or MSP, to reduce exposure.

Community

While the exploitation of monazite will likely result in increased community concerns around radiation risks, it is expected that these will be able to managed through development and delivery of a specific stakeholder engagement strategy and plan. The Monazite Project will leverage the Mineral Sands Project ESMS studies, management plans and programs

Stakeholder mapping

- The Mineral Sands Project stakeholder mapping which analysed stakeholders' ability to influence development of the project will be assessed to provide an understanding of the potential for persons, organisations and institutions to play a supportive or disruptive role in development of the Monazite Project.
- The stakeholder mapping will inform the development of a stakeholder engagement strategy and Stakeholder Engagement Plan for the Environment & Social (E&S) disclosure of the Monazite Project to manage stakeholders' concerns around radiation risks.

Stakeholder disclosure

- The Monazite Project E&S disclosure will include extensive engagement with communities, community leaders, local and national authorities and Civil Society Organisations (CSOs) with the objectives of:
  - Creating an understanding regarding existing (naturally occurring background) radiation exposure levels, possible exposure levels to personnel, communities and the environment from the integrated Toliara Project and the high doses required for physiological changes to occur.
  - Educating stakeholders on exposure pathways and how these will be controlled and monitored.
  - Developing an ongoing education awareness platform with stakeholders which can be used to share project information and monitor results.
  - Encouraging volunteers to be part of a Participatory Monitoring Program that will include monitoring gamma radiation in communities surrounding the Toliara Project.

Land acquisition and resettlement

- The Monazite Project does not require any additional land acquisition beyond the Mineral Sands Project area.

Grievance mechanism

- In line with IBP, the Mineral Sands Project established a grievance reporting and investigation process that enables stakeholders to raise their concerns in a way that will lead to timely resolution. The same reporting and investigation process will apply to the Monazite Project. The grievance mechanism will be communicated to stakeholders during the E&S disclosure.

Monitoring

- The Social Baseline Study will be updated and revised to ensure that an accurate and reliable baseline – prior to the mining, processing and transport of mineral sands products and monazite – exists before the commencement of construction and operations for the Toliara Project.
- A Health Impact Assessment, and an updated Radiation Baseline Study, both part of the suite of Environment and Social Management System (ESMS) studies, will be undertaken before the commencement of construction and operation of the Monazite Project and will consider potential radiation impacts on community health.
- These baseline studies will provide baseline data against which change can be assessed.

Community development

- Incorporation of the Monazite Project increases the significant opportunity the Toliara Project presents for the development of the Toliara region for the benefit of the region's people.
- Incorporation will also result in increased royalty payments and increased funds for community development projects for the Toliara region.

Environment and social

The Monazite Project will leverage the Mineral Sands Project's ESMS studies, management plans and programs, including the environmental permitting and approvals process

Regulatory framework

- Environment Permit No 55-15/MEEMF/ONE/DG/PE for the Mineral Sands Project is granted and valid.
- In previous discussions with the Environmental Regulatory Authority, ONE, in relation to prior changes to the Mineral Sands Project, ONE directed that project changes be achieved through supplementary studies and PGES' (specific environmental management plans) as part of the Toliara Project's ESMS and associated environmental documentation.
- It is anticipated that, consistent with previous directions from ONE, environmental approval for inclusion of monazite could be achieved in this manner.
- Engagement with ONE, including in relation to its requirements for approval for monazite, and collection of data to inform the Toliara Project's ESMS will commence on lifting of the current project suspension.

Environmental and Social Impact Assessment (ESIA)

- The findings of a Preliminary Environmental and Social Screening Assessment for the Monazite Project identified preliminary key E&S risks, impacts and opportunities and informed the baseline studies and management plan requirements and preliminary design mitigation controls. The screen assessment considered the following key issues:
  - Extended interval and delays in obtaining requisite environmental approvals.
  - Increased risk on "social licence to operate" due to stakeholders' perception on radiation risks.
  - Increased occupational radiation exposure for personnel through improper handling of radiation product and waste, inhalation of dust containing radionuclides, exposure, contact or ingestion to or of radioactive material.
  - Increased radiation exposure to communities, the environment and flora and fauna through the above exposure pathways.
  - Increased risk of incidents and exposure of workers, communities and the environment to radioactive material from spills from road traffic accidents, ship-loading and unloading incidents and shipping accidents involving the transport of monazite product.
  - Cumulative impacts on the environment and communities through the integration of the Monazite Project.
  - Increased investment in community development programs and environmental programs as a result of an increase in project operational revenues and royalties.

ESMS studies, management plans and monitoring programs

- The full suite of E&S baseline studies for the Toliara Project are scheduled to be updated on lifting of the current project suspension and once access to site is possible to enable collection of current baseline data.
- A full suite of E&S Management Plans and associated monitoring programs will be developed for the Toliara Project once preliminary updated baseline data has been collected and assessed.
- A comprehensive updated Radiation Baseline Study will commence on lifting of project suspension and resumption of field activities. The radiation data collected, including that from gamma surveys and exposure pathways, will inform other subject matter baseline studies and the Radiation Management and Monitoring Program.

Closure and rehabilitation

- The Closure Management Plan and Rehabilitation and Restoration Management Plan will be prepared taking cognisance of the recommendations and guidelines of the International Council of Mining & Metals' closure planning kit and take cognisance of changes as a consequence of the incorporation of a monazite product stream.

Legal

The new Mining Code now applies, but greater clarity is needed regarding the additional requirements to exploit monazite

The new Mining Code now applies to the Toliara Project

- A new Mining Code is in effect in Madagascar and now applies to the Toliara Project.
- The application of certain key provisions in the new Mining Code is unclear. These provisions include both those that apply specifically to mining radioactive substances, and provisions that apply generally to the Toliara Project. This lack of clarity in scope and application creates financial, technical and timing risks.
- The Mining Code Implementing Decree is being prepared by Government and is expected to provide further clarity on key provisions. Base Resources has provided inputs on these key areas, focused on achieving a balanced position with the requisite clarity and precision. Broader industry consultation is expected, to which Base Resources will further contribute.

Further requirements to exploit monazite

- While the Toliara Project holds key permits and authorisations for its development as a Mineral Sands Project, further requirements would need to be satisfied to exploit monazite.
- Key further requirements are:
  - Addition of monazite to Base Toliara's existing exploitation permit PDE 37242. This requires a submission to the mines department (*Bureau Du Cadastre Minier De Madagascar*) supported by a work program and financial plan. The submission requires approval by ministerial order.
  - Entry of a tripartite agreement with the specialist body with technical competence in the field of radioactive mining substances and the Government body representing AIEA (*Agence International de l'Energie Atomique*), focused on the measures and instructions relating to radiological protection and management of radioactive waste.
  - Entry of a bipartite agreement with the specialist Government body with technical competence in the field of radioactive mining substances.

    The scope of these agreements is a key area requiring clarity. It is anticipated that the new Mining Code Implementing Decree will provide this clarity, including template form agreements.

A work program will be required for the Toliara Project

- Under the new Mining Code, the integrated Toliara Project will require a work program (*Cahier des Charges Minières*) setting out the project specific commitments to which it will be held. As an existing licence, the Toliara Project is required to have a work program in place within six months of the new Mining Code coming into effect, although practically this will require the new Mining Code Implementing Decree to have been finalised.
- The work program will include the "technical and financial commitments" of the permit holder. The precise nature and scope of these technical and financial commitments is unclear, however it is anticipated that the Mining Code Implementing Decree will provide greater clarity – including a template work program.
- The new Mining Code does specify that the work program will include a project's waste management plan and corporate social and responsibility plan (including commitments to social investment, basic infrastructure and local content).

Key financial elements of the new Mining Code relevant to the Toliara Project

- The increased royalty rate from 2% to 5%. A reduction of 30% is applied to the 5% royalty in the event products are locally "transformed", the definition and application of which are unclear. A 5% royalty rate has been used for the Monazite PFS.
- A contribution to the "Mining Fund for Community and Social Investment" equal to 3% of the direct investment amount. The term "direct investment" is not defined and the applicability of this contribution requirement to the Toliara Project is unclear. If this requirement were to apply to the Toliara Project, based on the Monazite PFS capex of US$71 million and the Mineral Sands DFS2 Stage 1 capex of US$520 million, this would require a contribution of US$17.7 million. The Monazite PFS assumed the 3% contribution would apply to construction capex.

Large scale mining law (LGIM)

- The LGIM creates a beneficial legal and financial platform designed to attract and support large scale investments in the mining sector. The LGIM remains available under the new Mining Code.
- Upon agreeing fiscal terms applicable to the Project, the intent is for those terms to be secured through eligibility certification under the LGIM, a convention, or another mechanism that achieves an acceptable level of legal and fiscal stability.

Capital cost

With the Monazite Project being a 'bolt on' project to the Mineral Sands Project and leveraging its mining and processing activities and infrastructure, the incremental capex for the Monazite Project is only US$71 million, which relates to construction of the MCP and upgrades to the export facility for container handling and storage

Basis of the estimate

- Lycopodium coordinated the estimate, incorporating contributions from Mineral Technologies and PRDW.
- The estimate's reference date is Q4-2023 and has an accuracy of ±20-25%, compliant with an AACE Class 4 estimate and Base Resources' PFS Standard.
- The contingency allowance is 20%.
- No escalation provision is made.
- Vendor quotes provided 60% of the mechanical equipment cost estimates, with the remainder based on recent projects within the last year.
- Costs for electrical, instrumentation, and controls are factored at 60% of the mechanical costs.
- Earthworks and concrete quantities were derived from drawings and plans.
- Indirect costs are calculated as a proportion of direct costs, aligning with standard industry percentages for similar projects.
- For all other material rates, the Mineral Sands DFS2 rates plus 10% escalation was assumed. These rates are consistent with current costs in Lycopodium's ongoing projects.

Owner's Costs

- Allows for all project costs outside EPCM and construction contractors' scope.

Capital Cost Estimate	(US$m)
Monazite Concentrator Plant	13.1
Construction Distributables	5.1
Engineering and Construction Management Costs	5.6
Export Facility Infrastructure (onshore)	2.9
Export Facility Infrastructure (offshore)	19.1
Owner's Costs (detail below)	13.4
Sub total	**59.2**
Contingency (20%)	11.8
Total Project Capital Costs	**71.0**

Owner's Costs Estimate (Included above)	(US$m)
Shipping Containers (600), steel drums and pallets	4.2
Plant Mobile Equipment	3.1
Integrated Management Team, Specialist Consultants	3.5
Fees, Taxes, Duties, Spares, Tools & First Fills	1.2
Other	1.4
Total Owner's Cost	**13.4**

Operating costs

Operating costs have been derived from first principles and experience gained from Kwale Operations, incorporating local Malagasy cost inputs where appropriate

Maintenance

- Annual maintenance cost is estimated at 5% of the mechanical equipment cost.

Power

- Power cost is based on the incremental installed power demand of 450 kW at a rate of US$0.16/kWh.

Labour

- Skilled Workforce: The MCP will require a dedicated team of 16 personnel, including experienced production shift supervisors and plant operators.
- Logistics Support: 4 forklift drivers will be required for container handling at the export facility.

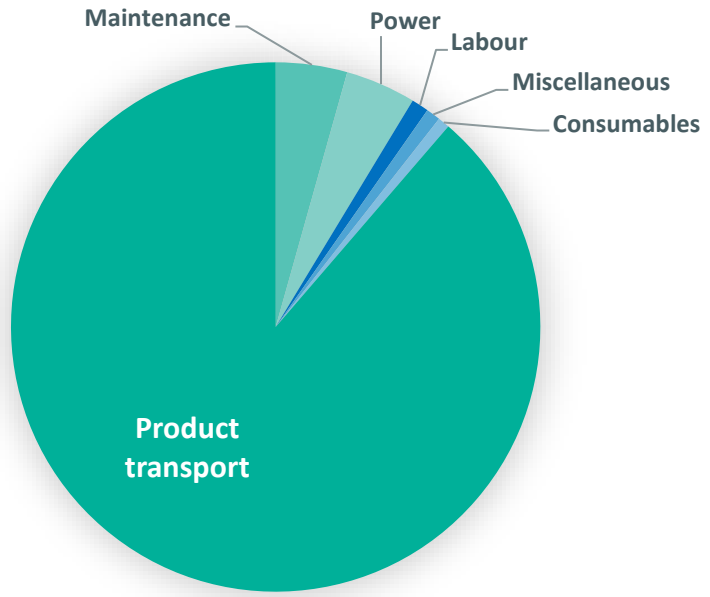
Consumables and miscellaneous allowances

- Allowance for consumables and miscellaneous items, such as rubber linings, paint systems, and replacement piping, ensures operational resilience.

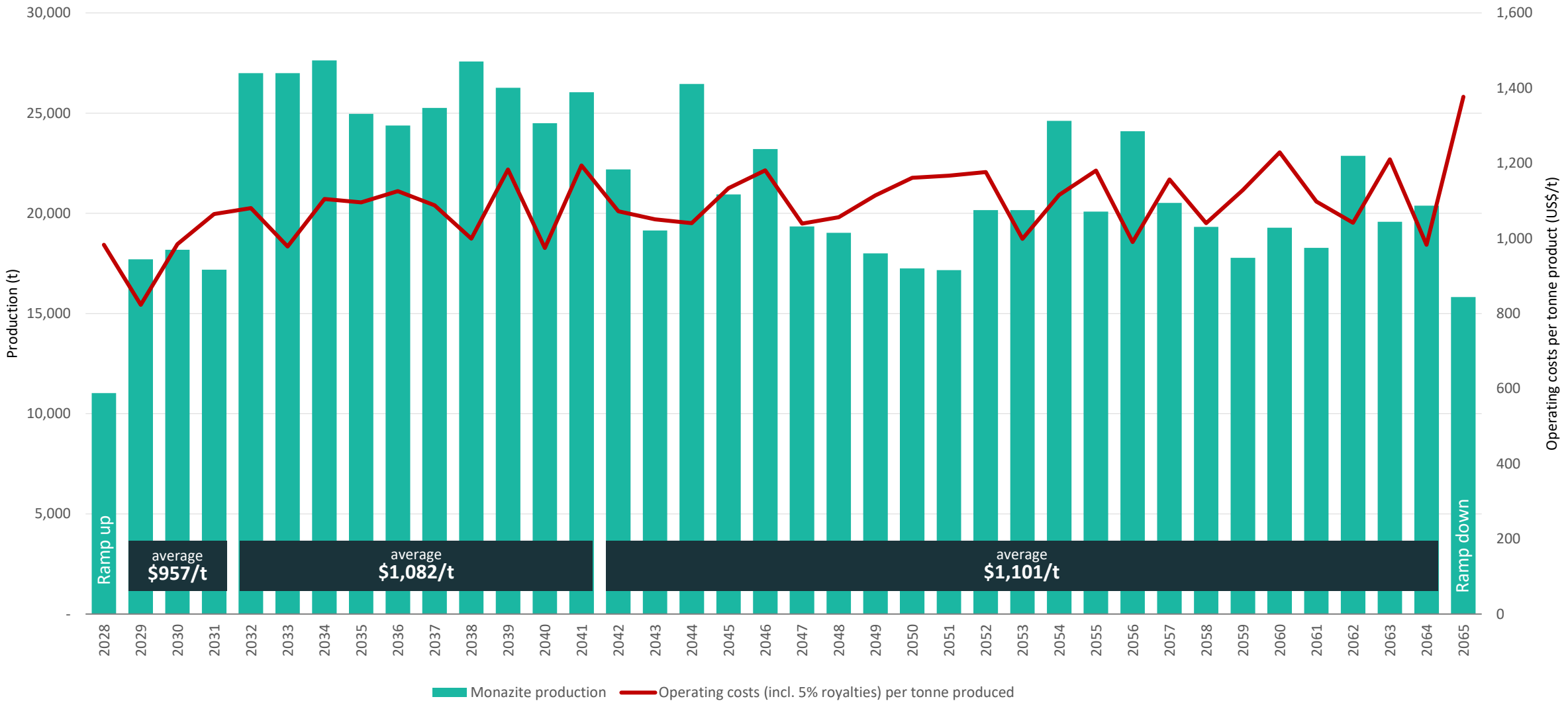
Product transport and logistics

- Product transport and logistics constitute the majority of the Monazite Project operating costs and is composed of two components:
  - In-country logistics: cost of transporting containerized monazite from the mine site to the export facility and onto a vessel is estimated to cost US$572 per 18t container, or US$32 per tonne.
  - Port and ocean freight:
    - Quotes received for Class 7 ocean freight to western markets (USA or Europe) estimate the cost between US$1.75 million for a 100 container shipment and US$2.40 million for a 500 container shipment. The Monazite PFS assumes all shipments will be in 200 container lots at a cost of US$1.91 million per shipment, or US$531 per tonne. International freight costs are expected to be borne by Base Resources, not the end customers.
    - Port of Toliara export rates are estimated at US$2 per tonne.
    - Hire of a second tug from the Port of Toliara is estimated at US$25,000 per shipment.

Monazite PFS Operating Costs		
	US$ per annum	% of Total
Maintenance	600,000	4%
Power	592,000	4%
Labour	170,000	1%
Miscellaneous	120,000	1%
Consumables	99,000	1%
Product transport and logistics	**12,300,000**	**89%**
Total	**13,881,000**	**100%**



Unit operating costs per tonne produced



Monazite Project financial outcomes

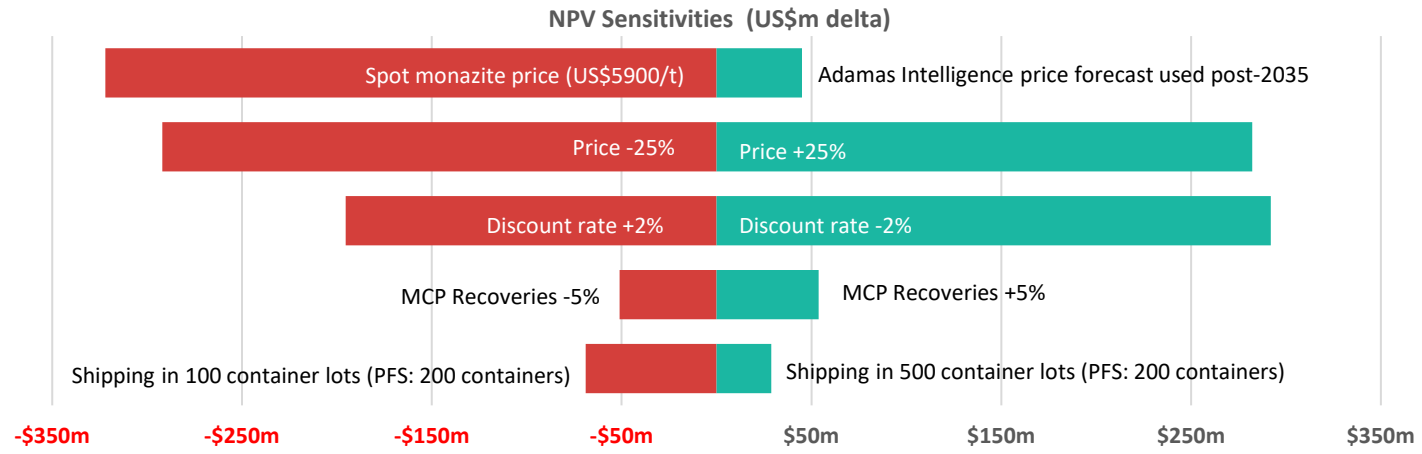
The Monazite Project delivers exceptional forecast financial returns due to its very low capital and operating costs

Incremental value of the Monazite Project PFS to Mineral Sands Project DFS2

- Post-tax / pre-debt (real) NPV @ 10% discount rate of US$999m.
- Annual averages (excluding first and last partial operating years):
  - Production of 21.8kt of monazite – containing 2.8kt of NdPr
  - EBITDA US$164m
  - Free cash flow US$130m

Select key inputs

- Monazite prices based on Adamas Intelligence forecast to 2035, then held flat for remainder of mine life.
- Market monazite payability of 35% for the contained magnet REOs of Nd/Pr and Dy/Tb oxides only.
- Includes the new Mining Code's 5% royalty and upfront contribution to the "Mining Fund for Community and Social Investment" equal to 3% of initial capex.

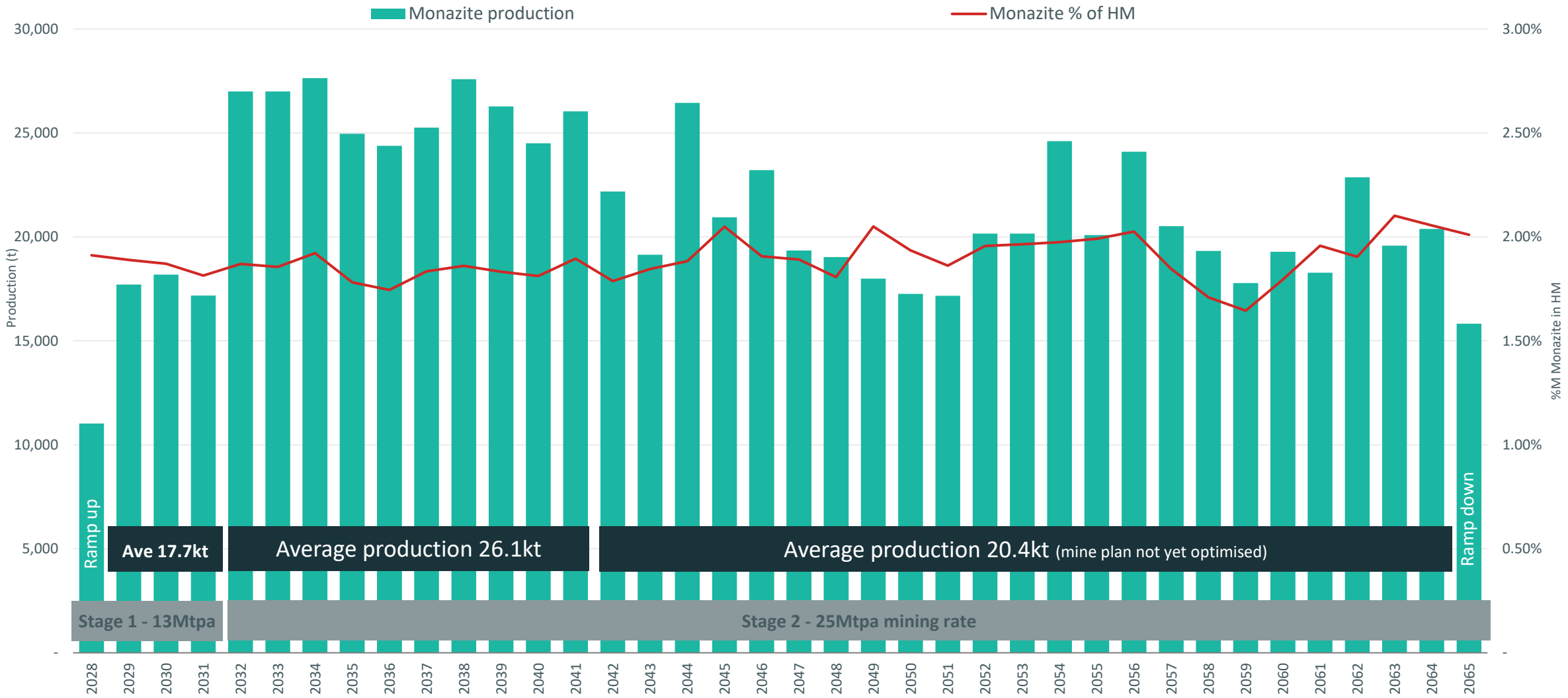


		Unit	PFS
NPV_{10} (discount rate of 10%), post tax, real		US$ millions	999
NPV_8 post tax, real		US$ millions	1,281
NPV_{10} – Spot monazite price, post tax, real		US$ millions	679
IRR		%	79%
Capex		US$ millions	71
Construction period – export facility		Months	29
Construction period – MCP		Months	15
Annual production rate		Ktpa	21.8
Monazite payability for contained REEs		%	35%
LOM revenue		US$ millions	7,009
LOM operating costs		US$ millions	532
LOM free cash flow		US$ millions	4,733
Average annual free cash flow		US$ millions	130
LOM unit operating costs + royalty	(A)	US$/t produced	1,089
LOM unit revenue	(B)	US$/t produced	8,649
LOM revenue : cost of sales ratio	(B/A)	Ratio : 1	7.9

* Alternative NPV calculations are provided for illustrative and comparative purposes. Spot monazite price assumed to be US$5,900/t. Base Resources considers a 10% discount rate to be the most appropriate for evaluation purposes.

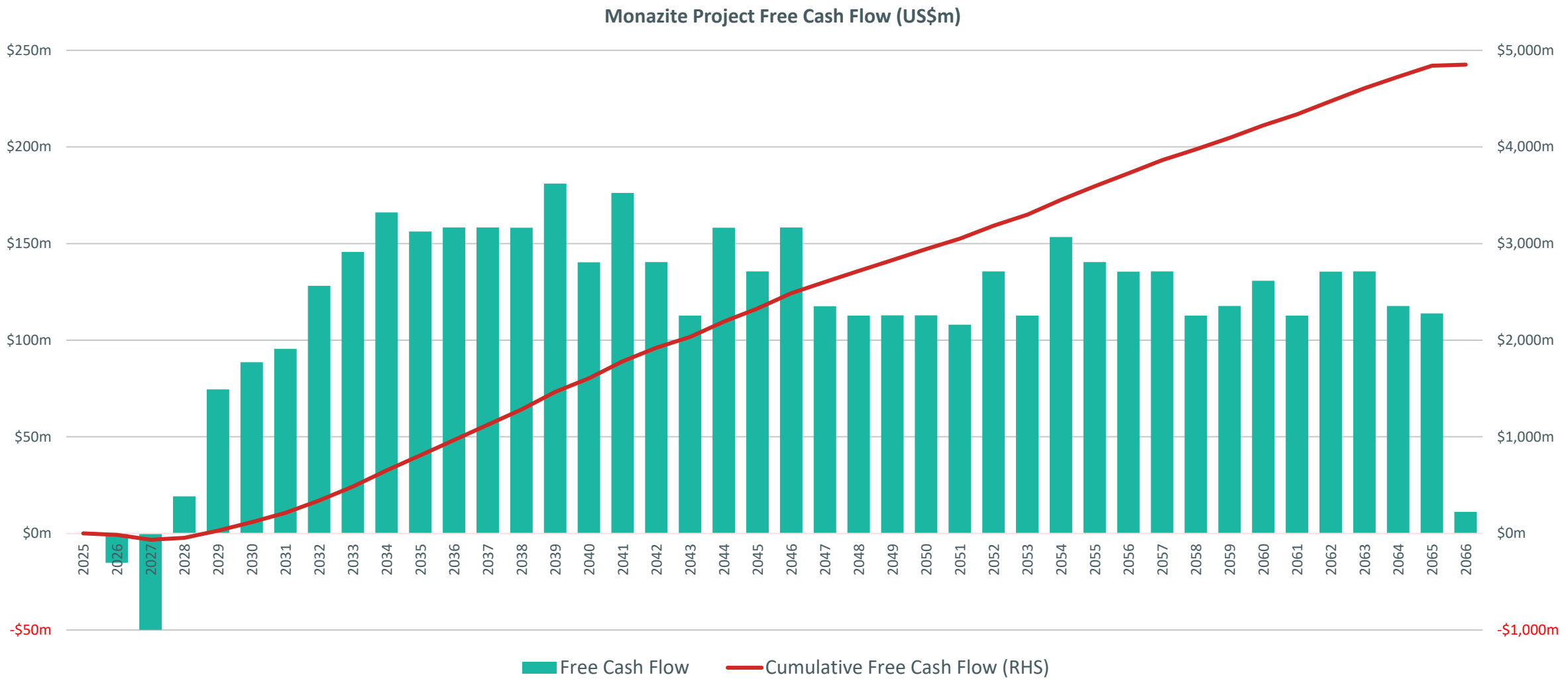
Monazite Project annual production profile

Monazite production rates peak during the first 10 years of Stage 2 of the Mineral Sands Project when mining rates increase 25Mtpa and the mine plan has been fully optimised



Monazite Project free cash flows

Benefiting from the zero cost feed from the Mineral Sands Project monazite waste stream, the Monazite Project delivers strong incremental free cash flows



Funding

As an enhancement of the Toliara Project, funding for the Monazite Project will be incorporated into the overall funding package for the Project

The Mineral Sands DFS2 assumed a US$700 million funding package, which increases to US$770 million with inclusion of the Monazite Project. The funding mix will be determined prior to FID and will be dependent on Base Resources' available cash on hand and forecasts for the construction, commissioning and ramp-up period costs, market outlook, debt availability and cost, and scope of any strategic joint venture or partner funding at the time. For the purposes of the funding analysis, the following assumptions have been made:

- 40% equity contribution - US$308m sourced from equity contributions from a joint venture participant, external partner funding and/or a capital raising. Additionally, successful negotiation of a targeted VAT exemption, or timely refunds, could reduce the overall funding requirement by up to US$61m and contribute to reducing the required equity funding.
- 60% debt facility - US$462m sourced from commercial banks, DFIs, export credit agencies and, increasingly, western government lending agencies focused on securing ex-China critical mineral supply chains.

The combination of the Monazite Project and the Mineral Sands Project delivers significant free cash flows that comfortably support the planned debt load.

On the basis of the project economics established by the Mineral Sands DFS2 and further bolstered through the addition of the Monazite Project (in particular free cash flow generation), the robust market outlook for mineral sands products and monazite, Base Resources' track record of successfully developing, operationalising and repaying financing on a similar project (Kwale Operations), prior success in capital raisings as and when required (including for the acquisition of the Toliara Project in early 2018), increasing funding availability for critical minerals projects and preliminary work already undertaken in relation to debt, JV participation and partner funding, Base Resources considers that there is a reasonable basis that development of the Toliara Project can be successfully funded.

Monazite Project - risks and opportunities

While considered unlikely, the risk of the Government insisting on a substantial interest has the potential to be a fatal flaw for the Monazite Project. Four implementation and one operational risk were identified as having High risk ratings after mitigation measures. One implementation and three operational opportunities were assessed as having High ratings

Implementation risks

- **Uncertainty in relation to the approvals/requirements to exploit monazite under the new Mining Code causes Monazite Project delays.** Requirements are specified in the new Mining Code for radioactive minerals and activities, but some key details are absent. The Mining Code Implementing Decree is yet to be finalised, which is expected to provide greater clarity. (Initial rating: High -> Post mitigation: High).
- **Delays in obtaining regulatory approvals to exploit monazite.** Delays can be caused by an absence of clarity in applicable regulations and requirements, lack of experience applying the regulations and lack of requisite technical understanding. Also, lack of Government resources and capacity, further accentuated by Government actions required for the Mineral Sands Project. Mitigation includes early engagement with Government and associated stakeholders. Base Resources has provided inputs to the Mining Code Implementing Decree, which Government is preparing. These inputs included that the scope of application of the agreements specified in the new Mining Code as being required for radioactive activities should be limited to technical safety or security concerns necessitated by radioactive activities. (Initial rating: High -> Post mitigation: High).
- **Delay in obtaining environmental approvals.** Delays can be caused by the reasons mentioned above and/or if ONE requirements are not consistent with prior directions for other project changes. Mitigation includes engaging stakeholders and educating environmental agencies, resulting in quicker approval intervals. (Initial rating: Extreme -> Post mitigation: High).
- **Community radiation concerns may significantly delay the Monazite Project**. Mitigation includes community and stakeholder engagement related to radiation. Training programs and inviting independent and Government experts to assess the project could result in fewer and shorter delays. (Initial rating: Extreme -> Post mitigation: High).

All require significant stakeholder engagement but remain high-rated risks after mitigation.

Operational risk

- Disruptions to operations by communities objecting to perceived dangers or radiation in monazite production and transport. As a mitigation, conduct community education and consultation programmes before operations commence. (Initial rating: High -> Post mitigation: High).

Implementation opportunities

- Geopolitical drivers resulting in western countries actively encouraging alternative supply chains to China. This may open JV and funding options.

Operational opportunities

- Incorporation of the Monazite Project increases the significant opportunity the Toliara Project presents for development of the Toliara region for the benefit of the region's people. Incorporation will also result in increased royalty payments and increased funds for community development projects for the Toliara region. These would all enhance Base Resources' social licence to operate.
- Potential for overall monazite recovery to be increased by 3-5% after flowsheet optimisation in the Monazite DFS testwork program.

Toliara Project – risks

Risks identified as having High risk ratings after mitigation related to implementation and operation of the broader Toliara Project, potential Government action or inaction and potential community disruption

Implementation and construction risks

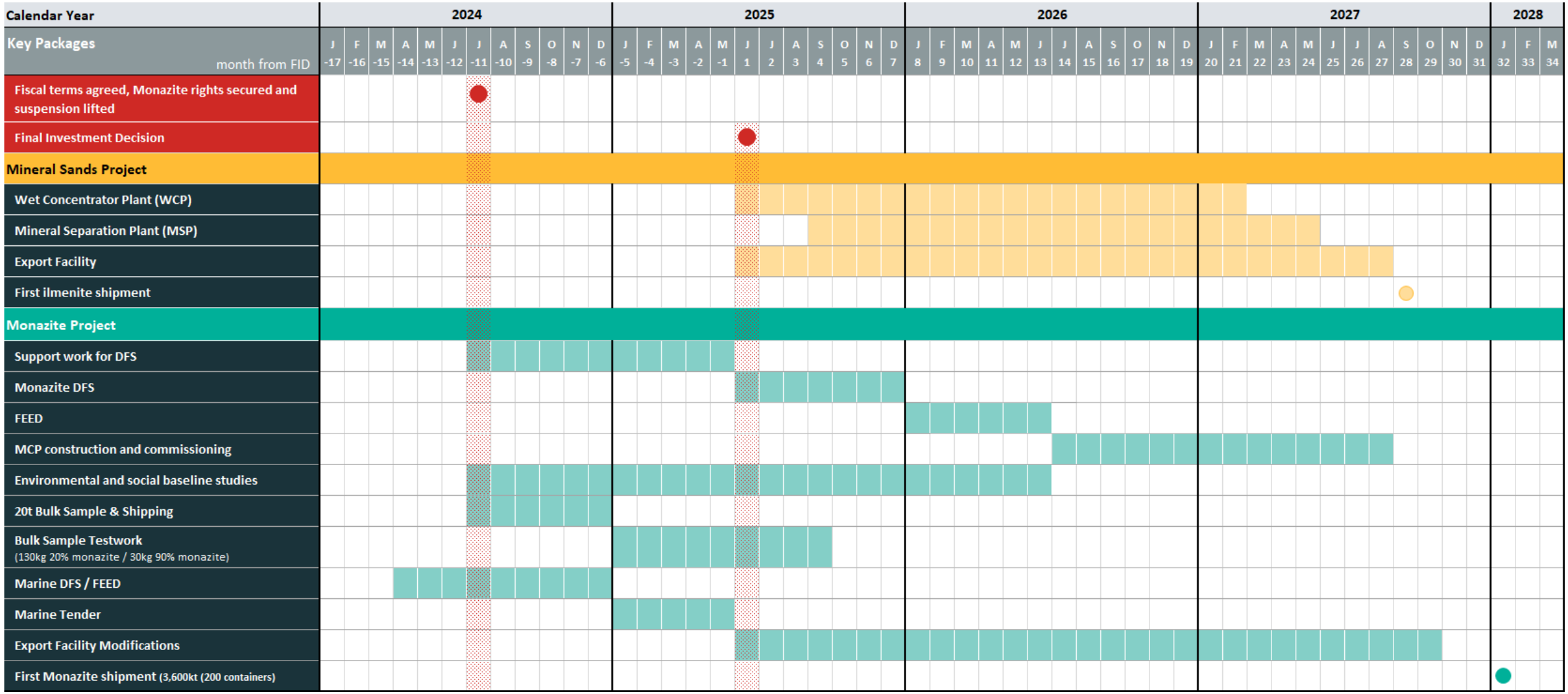
- Delays in lifting of the suspension and agreeing fiscal terms with the Government (Initial rating: Extreme -> Residual rating: High).
- Delays in obtaining the required approvals (in addition to those required for the Monazite Project) from the various regulatory bodies. (Initial rating: Extreme -> Residual rating: High).
- Requisite legal and fiscal stability on satisfactory terms (e.g. through certification under the LGIM) may not be obtained or there may be significant delays (Initial rating: Extreme -> Residual rating: High).
- Land acquisition at the Ranobe mine site is not finalised in time for construction activities to commence. (Initial rating: High -> Residual rating: High).
- Inability to secure sufficient long-term take-or-pay product offtake agreements with customers of good standing to satisfy traditional debt funding requirements. (Initial rating: Extreme -> Residual rating: High).

Implementation, construction and operational risk

- A fatality or serious injury during construction. (Initial rating: Extreme -> Residual rating: High).
- Delay or disruption to the Toliara Project caused by local political interference and/or community concerns and civil unrest. (Initial rating: Extreme -> Residual rating: High).

Indicative timeline

The schedule reflects the implementation strategy to produce monazite as early as possible without impacting the mineral sands production timeline



Mineral Sands DFS2 Recap

Mineral Sands Project description

The Mineral Sands Project will be implemented in two stages, with Stage 2 production commencing ~4 years after Stage 1 completion. Once the Government-imposed suspension is lifted and fiscal terms are agreed, an 11-month early works program is required to reach FID

On average, the Mineral Sands Project is expected to deliver a combined ~1,033ktpa chloride ilmenite, sulphate ilmenite, slag ilmenite, zircon and rutile over a predicted 38-year mine life based upon exploiting the estimated Ranobe Ore Reserves.

Stage 1 consists of engineering, procurement, construction and commissioning of:

- Heavy mobile equipment (HME).
- A dry mining unit (DMU).
- 1,750tph wet concentrator plant (WCP).
- 150tph mineral separation plant (MSP).
- Field services (pipes, pumps, powerlines, roads).
- Power generation facility.
- Borefield.
- Camp.
- Offices, laboratories and workshops.
- Haul/access road and bridge.
- Export facility storage shed, workshop and offices.
- Jetty, multi buoy mooring (MBM) facility and ship loader (located at Batterie Beach).

Stage 2 production commences ~4 years after Stage 1 mining commences. It will consist of the engineering, procurement, construction and commissioning of:

- A second DMU.
- A second 1,750tph WCP.
- Upgrading the MSP capacity from 150tph to 220tph.
- Additional HME.
- Upgrading the power plant capacity to accommodate increased process plants power demand.
- Additional boreholes to accommodate increased water demand.

The haul road, bridge and export facility are not impacted by Stage 2.

Ore Reserves and methodology

Mineral Sands DFS2 is underpinned by the JORC-compliant Ranobe Ore Reserves estimate of 904Mt at 6.1% HM, comprising the USU and SSU material only

- Resource model was optimised to generate pit shells via industry standard Lerch Grossman algorithm using Base Resources internally forecast product pricing, DFS test-work derived mineral recoveries and DFS derived operating costs.
- Building on the DFS work, ten pit shells (71% to 80% of revenue) were scheduled at high level and input into the DFS financial model to select the optimum pit.
- The 74% of revenue shell was selected based on a better match of HMC production with MSP design throughput of 150tph (Stage 1) and 220tph (Stage 2), financial metrics (weighted towards NPV and revenue to cost of sales ratio) and mine life expansion from the DFS. This shell was subject to preliminary mine planning and scheduled in detail for financial modelling.
- Additional optimisation and mine planning work will occur during FEED and the implementation phase.

Ranobe Ore Reserves estimate as at 27 September 2021						HM Assemblage as a % of HM^			
Category	**Tonnes** (Mt)	**HM** (Mt)	**HM** (%)	**SL** (%)	**OS** (%)	**ILM** (%)	**RUT** (%)	**LEUC*** (%)	**ZIR** (%)
Proved	433	30	6.9	3.8	0.1	75	1.0	1.0	6.0
Probable	472	25	5.3	3.9	0.2	72	1.0	1.0	5.8
Total	**904**	**55**	**6.1**	**3.8**	**0.1**	**73**	**1.0**	**1.0**	**5.9**

Table subject to rounding differences

^ Monazite and Garnet excluded from the Ore Reserves estimate because PE 37242 does not currently provide the right to exploit these products.

*Recovered Leucoxene will be split between Rutile and Chloride Ilmenite products depending on product specification requirements.

Mining

The selected mining method is conventional dozer-fed DMU with in-pit tailings deposition, enabling a short 3 to 4-year cycle from initial land clearing to final rehabilitation

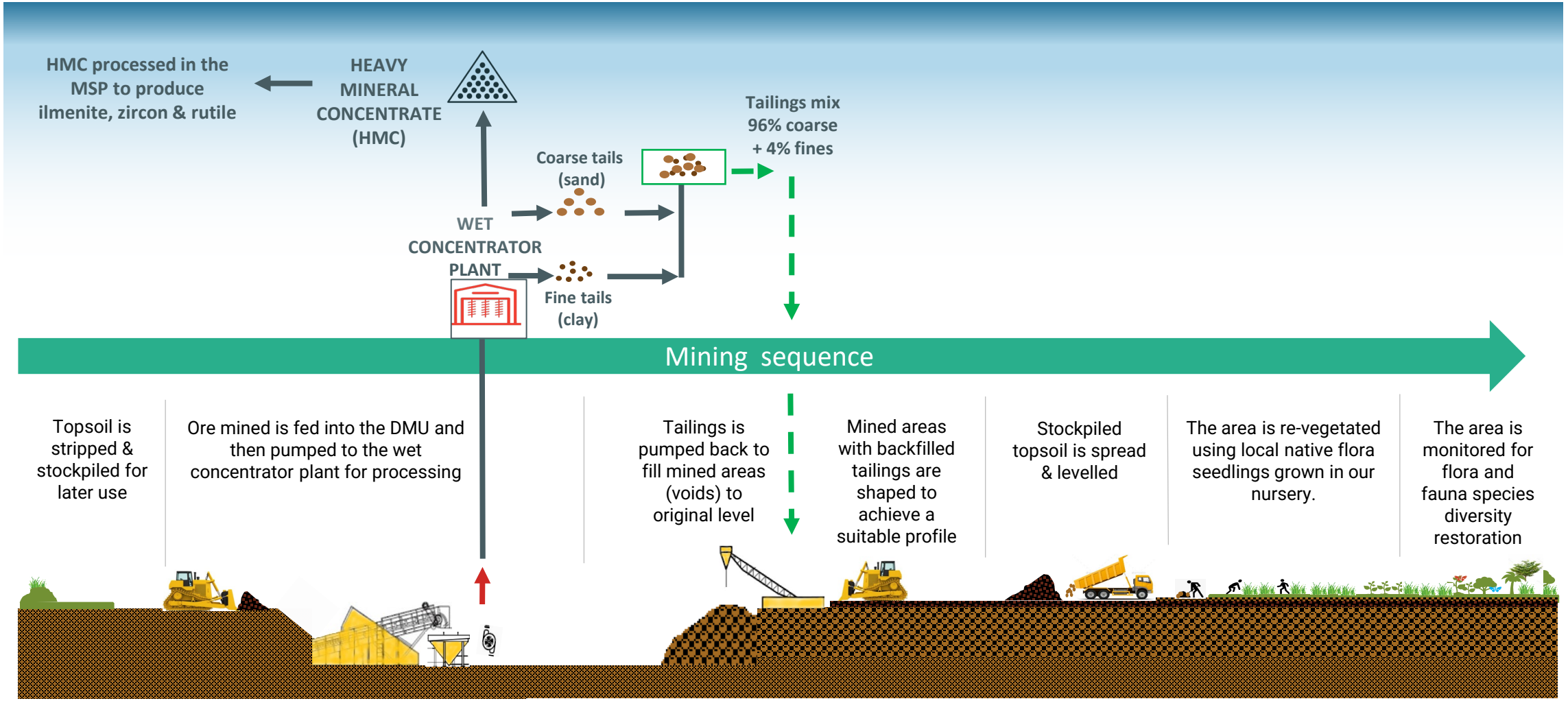
Planned mining activity cycle

- Scrub clearing – removal of trees and scrub by bulldozers, excavators and dump trucks. Stockpiled for community use or mulching.
- Topsoil stripping – using bulldozers, excavators, and dump trucks, topsoil is stockpiled for later rehabilitation or directly replaced onto rehabilitation areas. The aim is to preserve seed viability by minimizing time in stockpile.
- Mining – utilizing D11 bulldozers, in 200m x 100m blocks, into the DMU with some excavator assistance. Run of mine feed (ROM) enters the DMU through a grizzly (400mm screen), passes up the DMU conveyor which discharges through a slurry chute onto a 4mm screen. The screen undersize is pumped to the WCP. Oversize is disposed of in the pit void.
- Coarse tailing – quartz sand separated by the WCP is pumped, initially to an out of pit storage facility and later to the mining pit void where a moveable tails stacker de-waters the slurry. Water is recovered and pumped back to the WCP. Sand is stacked to a height approximating the planned finished surface level and then formed into fine tails evaporation ponds by bulldozer.
- Fine tailing – flocculated clay tailings from the thickener at the WCP is pumped to the evaporation ponds built on coarse tails. Initially, until enough coarse tails area is available, some ponds will be constructed on ore and the dried tails removed to allow subsequent mining. The tails ponds will be filled to a depth of ~1.5m and, when dry, the clay will be ~0.4m thick. An alternative co-disposal methodology (directly mixing fine and coarse tailings prior to deposition) using technology developed at Kwale will be evaluated during the FEED stage.
- Landform reconstruction and topsoil return – the desiccated fine tails are worked by bulldozer into the coarse tails to make a nominal 2m thick water retention layer at the surface, graded into final landform and topsoil replaced on top using front-end loader (FEL), dump truck and dozer or grader. The area will then be ready for rehabilitation.
- The process from scrub clearing to final rehabilitation is expected to take 3 to 4 years.

DMU Mining

Mining life cycle

The selected mining method is conventional dozer-fed dry mining with in-pit tailings deposition, enabling a short 3 to 4-year cycle from initial land clearing to final rehabilitation



Mining schedule

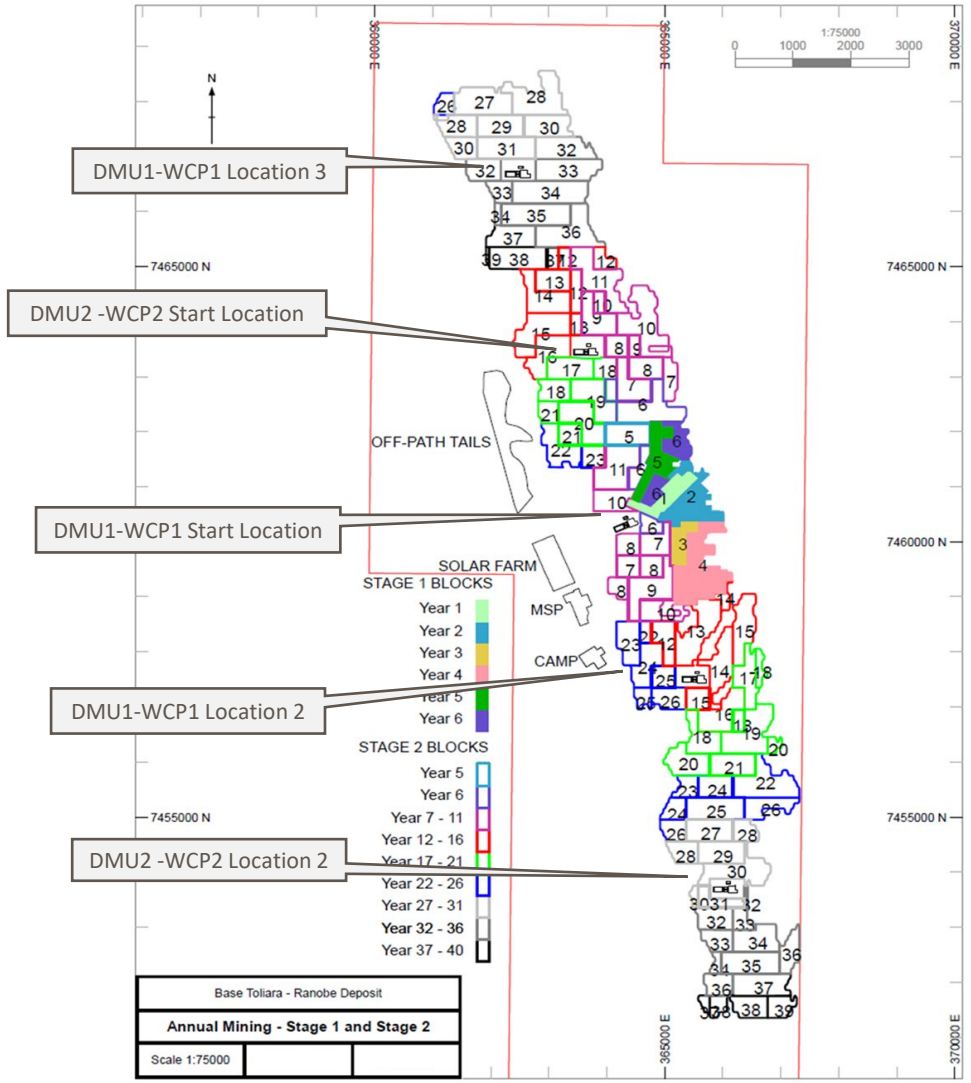
Mining will utilise D11 bulldozers feeding into a DMU to deliver 12.6Mtpa to the WCP in the first 4.25 years before increasing to 25Mtpa with the addition of a second DMU and WCP for the remainder of the mine life

Mining schedule

- Stage 1: 0 - 4.25 years – Single DMU and WCP, a fleet of two operating D11 bulldozers mining at a combined rate of 1,750tph. Mining of high-grade ore averaging 9.1% HM.
- Stage 2: 4.25 - 38 years – Additional DMU, D11 bulldozers and WCP operating at 1,750tph. Combined mining rate of 3,500tph, total D11 fleet of four operating units. Average ore grade of 6.1% HM.
- To maintain acceptable overland pumping distances, WCP1 moves in years 12 and 23 and WCP2 in year 23.

Water abstraction

- Stage 1: 526m^3 per hour.
- Stage 2: 976m^3 per hour.

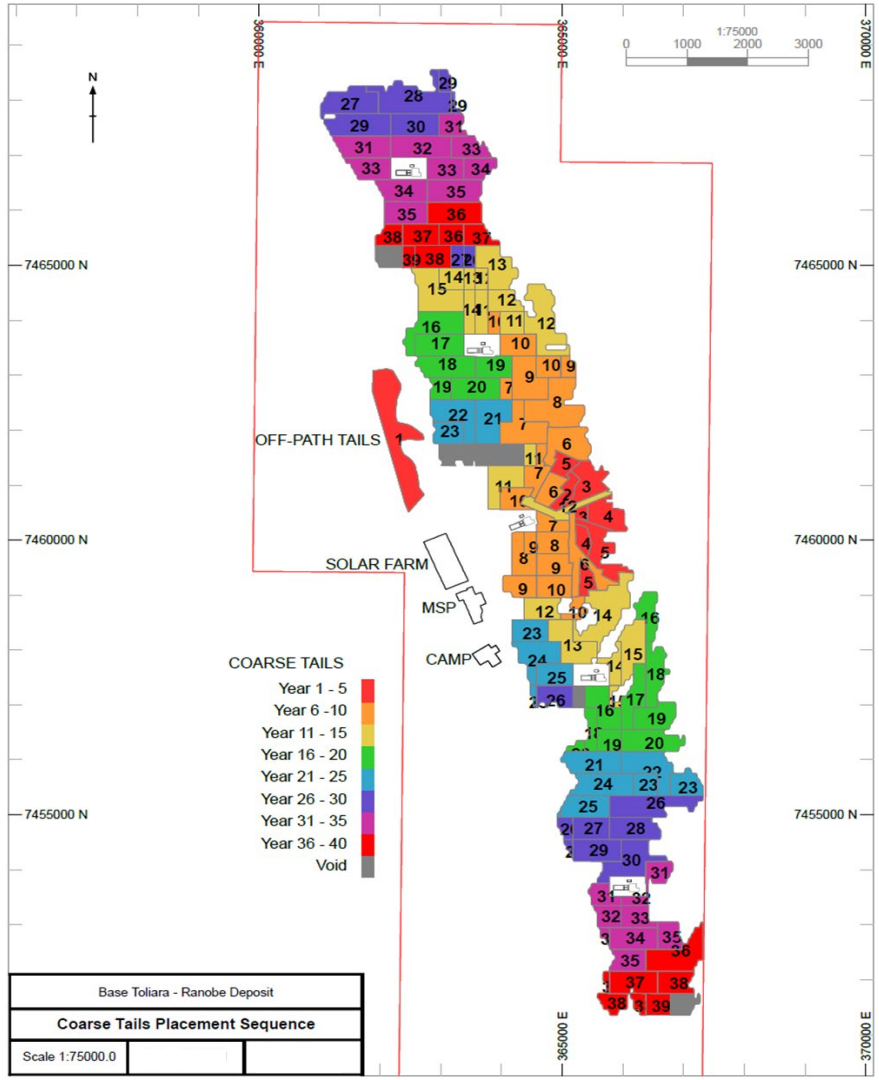


Tailings schedule

The tailings management plan allows creation of viable final landforms for rehabilitation approximately 18-24 months after mining

The tailings management plan is:

- Initially tailings will be stored out-of-pit tailing until sufficient pit void is available after 15 months of mining.
- A second out-of-pit tailing storage is required to service the first nine months of operation at the second location of WCP1 (Year 12).
- Subsequent WCP1 and WCP2 locations will use remnant pit voids for their initial tailings.
- Generally, coarse tailings will fill pit voids created 6-12 months earlier.
- Coarse tailings will be used to form evaporation ponds for fine tailings deposition.
- Initial fine tailing areas will be created on ore, and the dry tailings removed prior to mining.
- Fine tailings will normally fill evaporation ponds created on coarse tailings.
- Landform restoration will take place when fine tailings have dried and been reincorporated into upper layer of coarse tailings.
- Topsoil will be placed on reinstated landform, approximately 18-24 months after mining.
- Co-disposal of coarse and fine tails together to create a mix of clay and sand that reflects in-situ levels and promotes regrowth of native vegetation will be further refined during the initial 15 months of the Toliara Project's operation when ex-pit tails storage is undertaken.



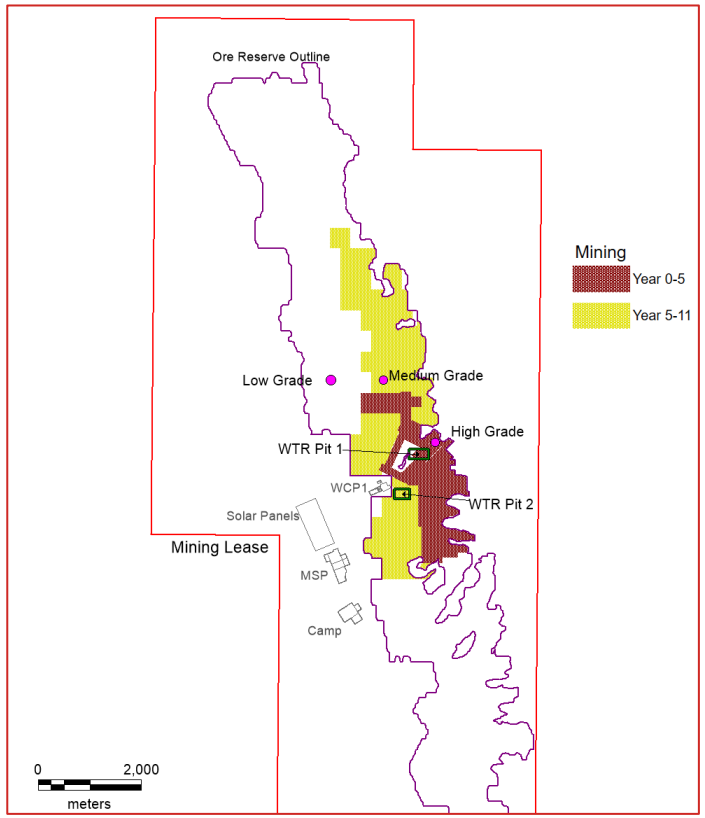
Metallurgical testwork and flowsheet design

The Mineral Sands DFS metallurgical testwork program, using full scale spirals, was the basis of the WCP flowsheet design and resultant design mineral recoveries

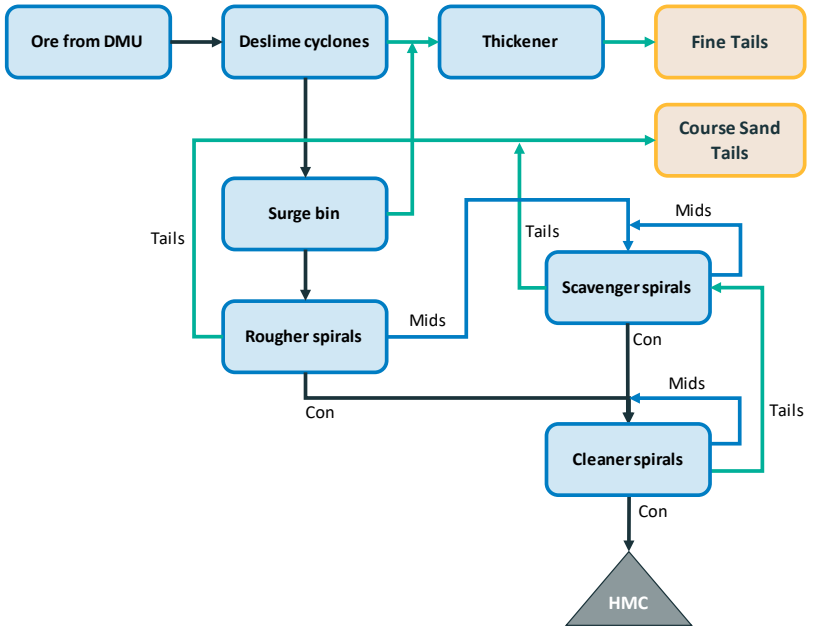
Wet concentrator plant

- In early 2018, Base Resources generated three bulk samples (low grade - 4.8% HM, medium grade – 8.2% HM, high grade – 10.5% HM) to represent a range of ore grades on which to base the WCP design.
- Base Resources' mineralogy methodology, MinModel, was adapted for the Ranobe deposit and used to calculate WCP performance during the testwork.
- A three-stage spiral wet gravity circuit was tested on the low, medium and high-grade bulk samples using a combination of MG12 and VHG spirals. The testwork was performed by Mineral Technologies in Brisbane.
- The testwork results were modelled using industry proven programs to optimise the flowsheet design, mass balance and resultant performance metrics.
- Bulk HMC samples were generated from each HM grade test as feed for MSP testwork and market sample generation.

Source of Bulk Testwork Samples



WCP Flowsheet



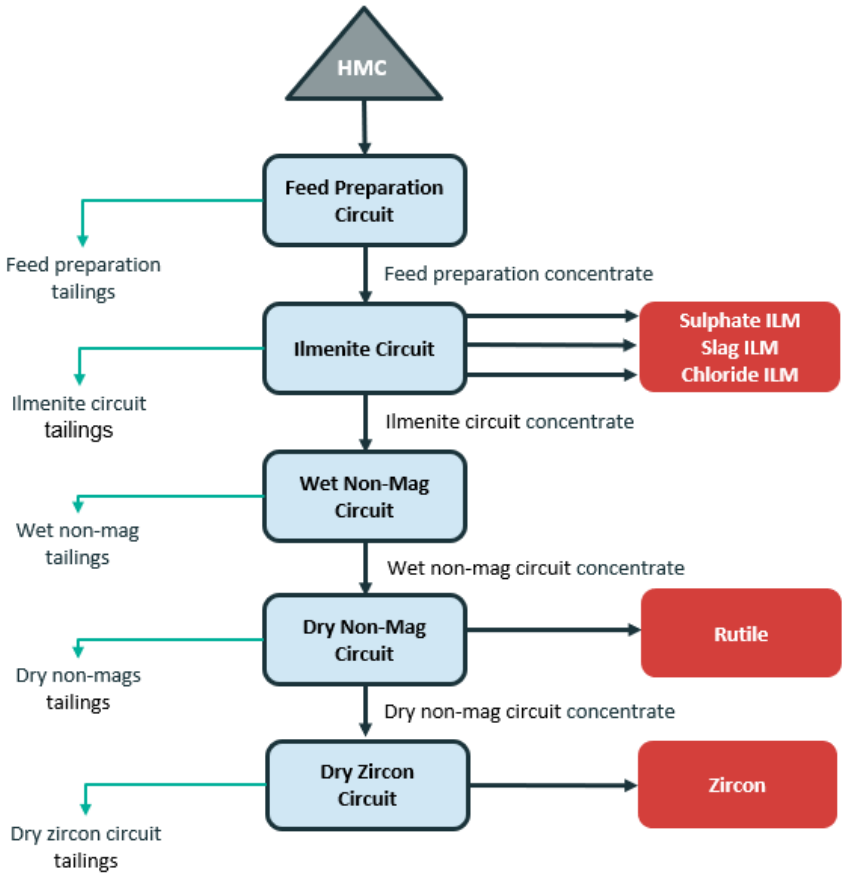
Metallurgical testwork and flowsheet design

Mineral Sands DFS metallurgical testwork program, using full plant scale separation equipment, was the basis of the MSP flowsheet design and confirmed the mineral recoveries and final product qualities

Mineral separation plant

- Three feed samples representing HMC from low, medium and high-grade ore generated from WCP testwork were used as feed for MSP flowsheet development testing. The testwork conducted by IHC Robbins provided final product samples for marketing and established mineral recoveries and final product grades.
- The ability to produce varying ratios of three ilmenite products, sulphate, slag and chloride grades from the full range of HMC feedstock to match market conditions was confirmed and built into the process design.
- A comprehensive and iterative series of tests were completed to establish flowsheets for each processing stage consistent with the design intent:
  - Feed preparation – removal of coarse and fine quartz using wet gravity separation.
  - Ilmenite circuit – produce three ilmenite products under varying ore types and generate a non-magnetic stream, using magnetic and electrostatic separation.
  - Wet non-magnetics circuit – remove residual quartz to enable efficient rutile separation using wet gravity separation.
  - Rutile circuit – produce a rutile product and a non-conductor zircon stream using electrostatic and magnetic separation.
  - Dry zircon circuit – remove Fe and Ti contaminants to produce a standard zircon product using electrostatic and magnetic separation.

MSP Flowsheet



Product recoveries

An extensive suite of testwork was undertaken that provides a sound basis for product recovery estimation

Wet concentrator plant

- Testwork on each of the low, medium and high-grade bulk samples was used to generate a model (Mineral Technologies) from which the WCP recoveries (ilmenite, rutile and zircon) were estimated.
- High-grade scenario recoveries were assumed and then further reduced (for ilmenite, rutile and zircon) by 1.5% to allow for the reality of plant operations often running at sub-optimal conditions.
- Insufficient data and accuracy was available for leucoxene recovery estimation using the Minmod mineralogy method and the Mineral Technologies WCP simulation. This was calculated based on the non-mag TiO_2 recovery.

Mineral separation plant

- Ilmenite recovery – derived from the MSP testwork and calculated on a circuit-by-circuit basis, an average total recovery (from three bulk samples processed) of 94.4% was established.
- The proportion of each ilmenite product produced (sulphate, slag and chloride) used testwork results adjusted for product quality targets using a mathematical model with interpolation algorithms. The quality targets and splits were optimised for NPV. The design accommodated a range of potential ilmenite splits.
- Zircon recovery - derived from the MSP testwork, a recovery was calculated on a circuit-by-circuit basis to give an overall zircon recovery of 79.4%.
- Rutile recovery – derived from the MSP testwork and calculated on a circuit-by-circuit basis, giving an average total recovery (from three bulk samples processed) of 54.1%.
- Leucoxene is recovered to a HiTi stream which is redirected to both rutile and ilmenite products.
- Leucoxene recovery - derived from the MSP testwork, a leucoxene recovery of 23.2% was calculated that is distributed to ilmenite and rutile, 79% and 21% respectively. This increases the ilmenite and rutile total recoveries to 94.6% and 58.4% respectively.

WCP Recoveries

	Low Grade Ore	Medium Grade Ore	High Grade Ore	Avg	DFS Design
Rutile	97.1	95.8	93.8	95.6	92.3
Zircon	98.5	98.6	98.7	98.6	97.2
Ilmenite	97.1	96.6	96.4	96.7	94.9
Leucoxene	85.0	80.0	70.0	78.3	75.0
% HM in HMC	91.0	91.0	91.0	91.0	91.0

MSP Recoveries

	Base	Leucoxene re-distributed
Ilmenite	94.4	94.6
Zircon	79.4	79.4
Rutile	54.1	58.4
Leucoxene	23.2	0

Ilmenite Splits

Ilmenite	Proportion %	Target %TiO_2
Sulphate Ilmenite	47.0	48.5
Slag Ilmenite	27.2	50.5
Chloride Ilmenite	25.8	57.0

Process engineering – dry mining unit

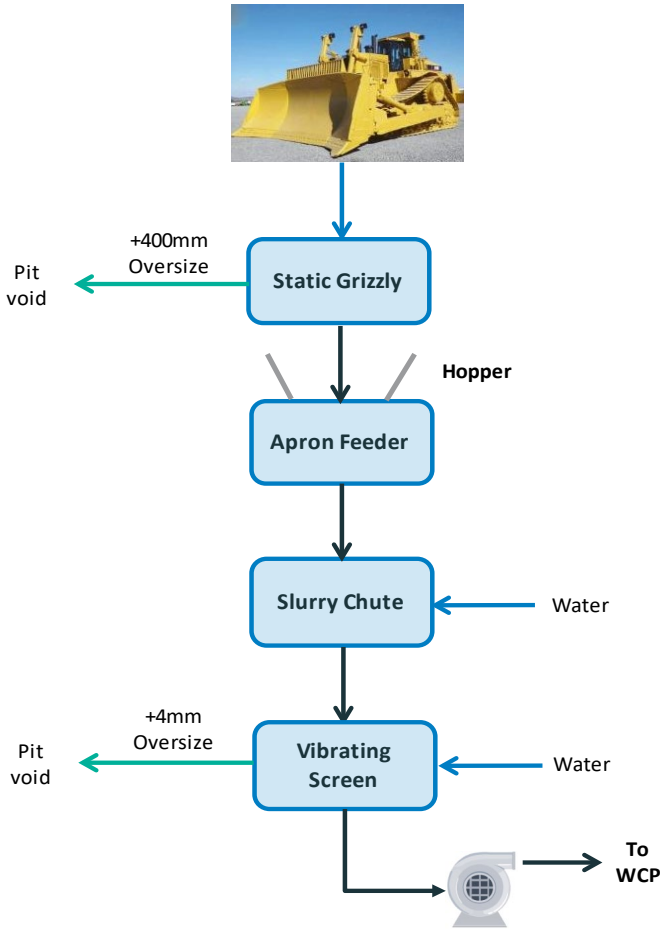
The processing plants design for Stage 1 includes a DMU, 1,750tph WCP, 150tph MSP, water circuit, tails disposal and electrical reticulation. Stage 2 includes a second DMU, 1,750tph WCP and upgrade of the MSP to 220tph

Dry mining unit

- Piacentini & Son will be commissioned to supply a new DMU for Stage 1, similar to the existing unit at Kwale Operations. A second identical DMU will be commissioned for the Stage 2 upgrade in year 4.
- A 4mm screen will be installed on the DMU hopper to remove all +4mm material in the mining area.
- The DMU pump will be supported by ROM booster pumps to pump ore to the WCP from the DMU when the distance between the two plants is greater than ~800m.
- Each DMU is designed to be relocatable (using Caterpillar D11 bulldozers), which is anticipated to be every 2-4 weeks.

Dry mining unit

Mining process flowsheet



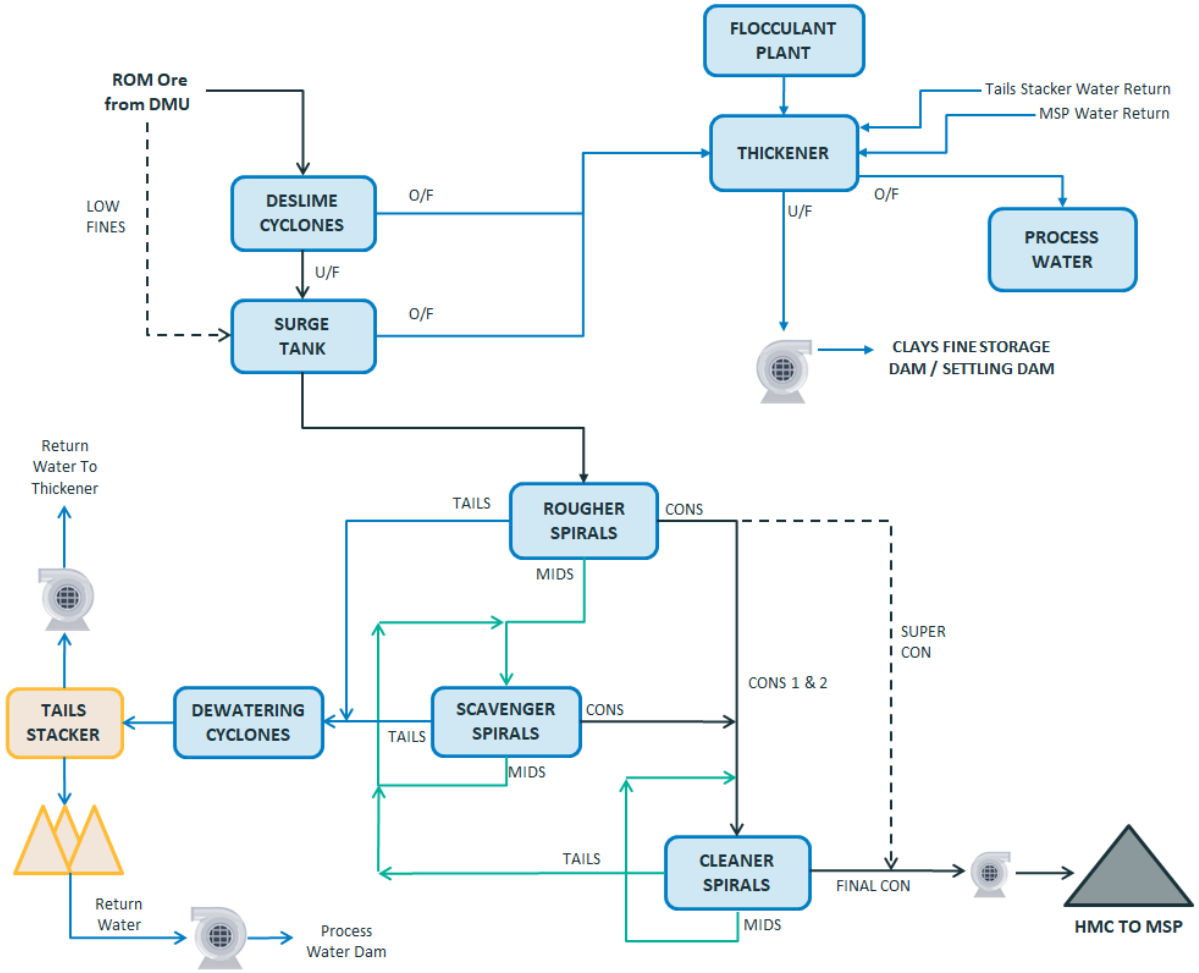
Process engineering – wet concentrator plant

Both 1750tph WCPs are simple but robust 3-stage spiral plant designs based on bulk sample testwork programs conducted at Mineral Technologies metallurgical facilities and caters for the range of heavy mineral grades within the Ranobe deposit

Wet concentrator plant

- The flowsheet developed uses proven spiral technology to produce a HMC grade above 90% HM.
- De-sliming cyclone and thickening circuit designed for wide range of ore clay content.
- A constant density surge tank provides a one-hour buffer between the DMU and WCP.
- MG12 spirals, operating at 2.5tph per start, used in rougher and scavenger stages minimises footprint and simplifies the design, reducing pumping costs and power requirements.
- The cleaner spirals are twin start VHG operating at 1.5tph per start.
- Cross launders have been incorporated in the design to simplify material flow and reduce the number of gravity launders by 75%.
- HMC will be pumped to the MSP from each WCP.
- Tailings are pumped back to the mine void as back fill with water recovered to minimise make up water required from the borefield.

WCP flowsheet



Process engineering - mineral separation plant

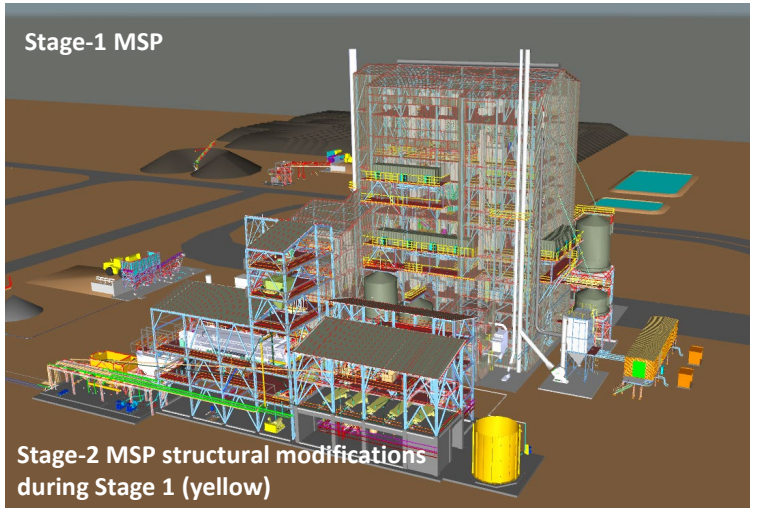
Extensive design optimisation was undertaken in DFS2 to balance plant availability (by reducing number of drives), operating costs and capital costs

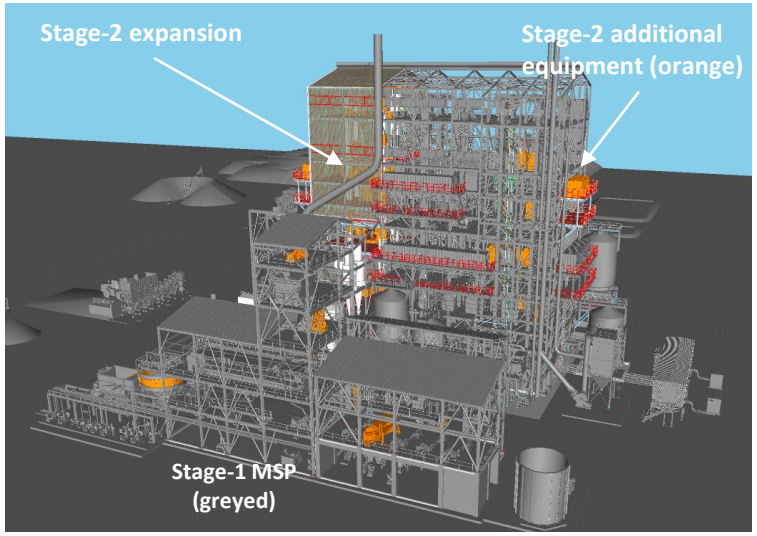
Mineral separation plant

- Stage 1 feed rate of 150tph, decoupled from the mining operation by a HMC stockpile which buffers changing ore grades and differing plant run times.
- The MSP will be upgraded to 220tph in year 4 as part of Stage 2. A larger dryer, belt filter, HMC surge bin, screen and UCC will be included as part of Stage 1 to minimise overall combined Stage 1 & 2 project capex and downtime during the Stage 2 upgrade.
- The MSP location is fixed for the life of mine. It is a ~52m tall building with multiple machine floors to reduce operating cost (by utilising gravity to reduce materials handling equipment and drives).
- Final products will be stored in 1,000t bins (350t for rutile). Additional site storage is provided for the three ilmenite products (two week's production).
- Tails from the MSP are pumped back to the WCP to be disposed with the main tails lines.
- The ilmenite circuit design incorporates the facility to isolate a single machine for cleaning and maintenance.
- Fresh raw water will be used where necessary to ensure product quality.

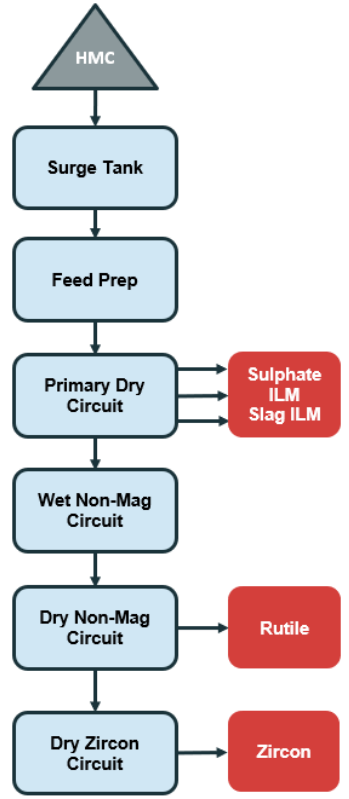
Sampling

- All incoming and outgoing streams throughout the plant are automatically sampled, including dry stream analysers on the zircon and rutile circuits.





MSP flowsheet



Infrastructure

Existing infrastructure required for the Toliara Project is limited. The project scope addresses this through building a dedicated product haulage and access road, bridge, export facility, hybrid power plant, bore field for water supply and a permanent camp

Existing infrastructure

- Toliara has an existing container port able to accommodate coastal vessels, an airport with scheduled domestic and international flights and good mobile and data communications.
- The RN9 national route, although upgraded and sealed during the last few years, is not suitable for oversize and heavy construction loads or road train product haulage. The existing bridge over the Fiherenana river also has limited capacity.
- There is no electrical power grid in the vicinity of the mine. Power supply at Toliara is limited and unreliable and currently not adequate for the new export facility site, although plans are in place to upgrade the local generation facility by addition of solar power.
- There is limited existing accommodation in Toliara for the anticipated non-local construction and operations personnel requirements.
- There is no suitable sewage treatment facilities in the area but there is a solid waste recycling plant some 10kms north of Toliara.
- Toliara has a diesel bulk storage facility at the port that is shared amongst four distributors.

Roads

- A new 45km long, sealed, dedicated, haul and permanent access road will be constructed, including a new 630m long concrete bridge over the Fiherenana river. Provision is made for several community crossing points as well as an underpass at the RN9 crossing. The bridge will be designed to withstand 1:100-year floods.
- A staged development approach includes:
  - Upgrading of existing Ranobe road for early process plant contractors' access through the RN9 immediately after FID.
  - Construction of the northern section of the haul road in conjunction with upgrading the PK24 road to facilitate movement of heavier WCP / MSP mechanical equipment. This route avoids populated villages along the RN9 north of PK24.
  - Construction completion of the southern haul road section to the export facility in time for first product export.
  - Contractor access to the export facility will be constructed pre-FID to provide the piling contractor access immediately on FID.

Infrastructure

Comprehensive groundwater modelling has confirmed suitable quantities of water can be abstracted from an aquifer without adverse community or environmental impacts. Detailed offers have been received for bulk power supply

Water

- Ground water modelling (Knight Piesold) has confirmed the ability to sustainably source the required make-up water for the Stage 2 (25Mtpa) mining rate from four borefields within the mining permit area, consisting of nine operating (five for Stage 1 and four for Stage 2) and two standby 30l/s boreholes.
- The estimated raw water requirement for Stage 1 is 526 m^3/hr and Stage 2 is 976 m^3/hr, with permitting required in due course.
- Drilling of three production boreholes to enable step testing and refinement of the groundwater model is planned during the pre-FID phase and monitoring bores for baseline and operational purposes will be installed.

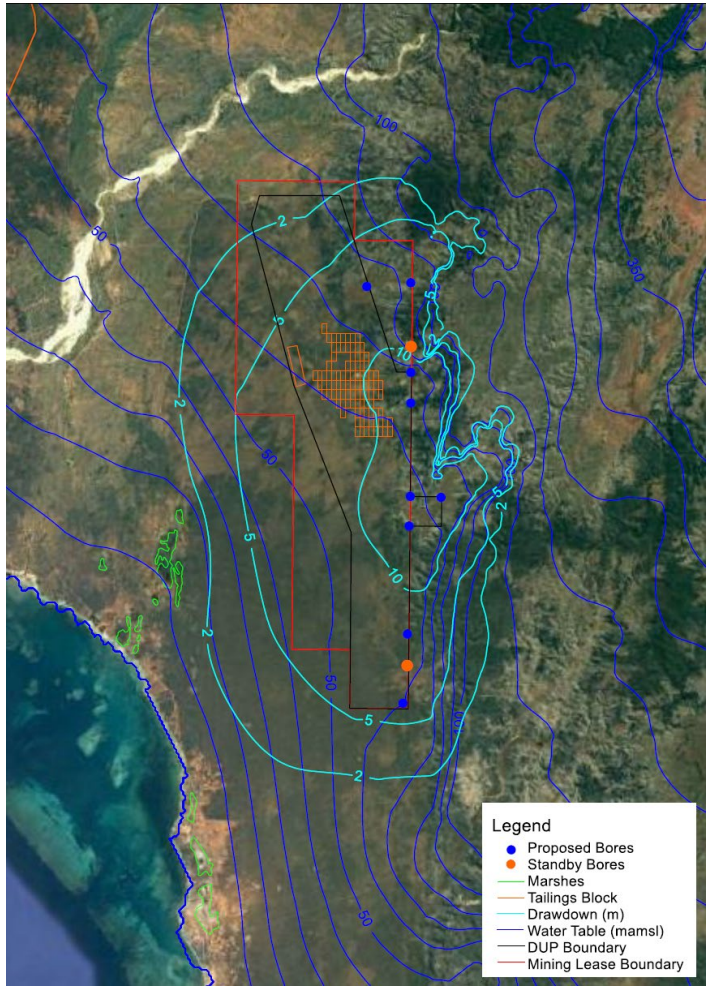
Power

- Power for the mine site will be "self-supplied" by Base Toliara, with the generation facility to be constructed by an IPP who will in turn operate and maintain that facility on Base Toliara's behalf.
- Power generation will be based on a hybrid thermal, solar photovoltaics (PV) and battery storage system located near the MSP. The design aims to maximise solar contribution to reduce CO_2 emissions.
- Stage 1 installed power is 23.5MW with a maximum demand of 15.1MW with an average usage of 10.5MW. Stage 2 will increase installed power to 35MW with a maximum demand of 24MW and an average usage of 15.2MW.
- Export facility power will be self-generated using high speed diesel generators with a contribution from solar PV.

Accommodation camp

- An accommodation camp of 272 rooms (converted to 511 beds with shared rooms) will be constructed to accommodate the peak construction workforce. 219 rooms are required for operational workforce leaving 53 surplus rooms.
- The 53 surplus rooms are sufficient to accommodate Stage 2 construction and operations workforce.
- National labour and off-site contractors will be housed in the local communities. Local workforce will be bused in daily.

Bore field locations and drawdown



Infrastructure

Full bridge simulations have confirmed the operability of the multi-buoy mooring berth for vessels in a wide range of operating and environmental conditions up to Panamax class (partially loaded to 68kt). Typically, Ultramax vessels (loaded to 63kt) will be used during operations. Stage 1 ship loading will occur 14-17 times per year while ship loading at Stage 2 peak production will occur up to 26 times per year

Mine complex

- Provision has been made for fencing, security, offices, workshops, laboratories, stores, change houses, ablution blocks, control rooms, weighbridge, clinics and first aid facilities, water storage dams and tanks, fuel storage facilities, firefighting systems, storm water management and landscaping. No additional infrastructure will be required for Stage 2.

Waste treatment

- A sewage treatment plant (STP) will be constructed at the mine complex and serve the process plant, mine complex buildings and accommodation camp. Conservancy tanks will be utilised at remote sites such as the export facility and sewage transported to the STP for treatment. No additional infrastructure required for Stage 2.

Product haulage

- Up to a maximum of 1,303kt of product will be hauled annually from the mine to the export facility by a transport contractor utilising 90t triple trailer road trains operating 13 hours per day on a seven days a week basis.

Export facility

- An export facility at Batterie Beach will include a storage shed for 135kt of ilmenite, 10kt rutile, with a separate shed to store 17kt of zircon. At the MSP, an additional 38kt of product storage will be provided during Stage 1. For Stage 2, the MSP storage capacity will be increased to 75kt.
- Ground improvement (rigid inclusion piles) required for the shed foundations.
- A 550m long jetty with pipe conveyor and fixed ship loader will load Panamax vessels (loaded up to 68kt) or Ultramax vessels (loaded up to 63kt) moored on a multi-buoy mooring berth. No additional infrastructure is required for Stage 2.
- A charter contract will be placed for a fully crewed tug with minimum bollard pull of 40 ton and a mooring line handling vessel for the operations phase.

Multi Buoy Mooring Navigation Simulation

Marketing – pricing

Product pricing forecasts through to 2030 are derived from Base Resources' internal supply/demand analysis before transitioning to TZMI's long term inducement prices from 2035

Over the short term, Base Resources' supply forecast is generally aligned with TZMI's five year outlook for existing producers, but Base Resources forms its own view on the anticipated timing of new brownfield and greenfield projects coming into production.

Base Resources' medium to long term supply forecast is based on its internal view of future production from existing operations as well as new brownfield and greenfield projects. For each new project forecast to commence production in the future, Base Resources considers the stage of development, estimated economics, mine life, applicable risks and the forecast market supply gap to determine a likely start-up date.

Product Prices USD/t (FOB)	Average 2025 – 2030	Average 2031-2034	From 2035	LOM Average
Sulphate ilmenite	$187	$197	$189	$189
Slag ilmenite	$196	$207	$199	$199
Chloride ilmenite	$254	$281	$285	$278
Rutile	$1,369	$1,259	$1,117	$1,185
Zircon	$1,628	$1,573	$1,496	$1,532

DFS2 forecast product prices

- Base Resources' internal price forecast for each product is used until 2030.
- From 2035 prices are assumed to be the long-term inducement prices, as forecast by TZMI, re-based to 2021 real. The exception to this is chloride ilmenite, which is derived from Base Resources' internal long-term outlook specific to the chloride ilmenite sector and a pricing structure that is more consistent with traditional practice within that sector.
- Prices transition between 2030 and 2035 in a straight line.
- All forecast prices are FOB, real 2021, after adjusting for expected product quality.

Base Resources' internal supply/demand analysis and price forecast methodology

Base Resources' internal price forecast is derived from continuous supply and demand analysis. In broad terms, when a supply deficit is forecast, prices are predicted to trend upwards and when a supply surplus is forecast, prices are predicted to trend downwards. However, the direction and extent of forecast price movements also take into consideration:

- Industry inventory levels relative to levels considered to be normal.
- Estimated "floor" and "ceiling" prices derived from historical precedents, for example, where low price levels would threaten the economic viability of many producers or excessively high prices encourage product substitution to take significant effect.
- The anticipated behaviour of key suppliers actively managing production to support prices.

Base Resources' internal supply and demand analysis utilises historical production and consumption data. Base Resources' forecast product demand utilises TZMI's five year demand outlook before transitioning to a steady annual growth rate, generally consistent with global GDP growth forecasts, adjusted for product specific considerations where applicable.

Implementation strategy

The Toliara Project is a "greenfields" project that will be constructed on a remote site in a developing country with limited construction resources. The delivery approach addresses this, incorporating Base Resources' experience in delivering and operating Kwale Operations

Toliara Project implementation objectives

That the wider industry will see the delivery of the Toliara Project as the best reference project to emulate:

- It has been delivered safely, on time, on budget and environmentally responsibly.
- It is making a real and sustainable positive difference to the surrounding people and communities.
- A new standard has been reached in terms of incorporating an optimum balance between innovation, low capital cost and risk.
- Design and delivery have ensured the facilities are effectively operated, maintained and quickly ramped up to the requisite production efficiencies and outputs.
- People and companies who are part of the delivery feel they have been part of an outstanding success and experience.

A number of factors drive the implementation strategy

- Complex scope (mineral sands) and long life requires continual owner's input to ensure an enduring, fit for purpose and world class design is delivered.
- Remoteness of the project and the country risk limits the appeal of "lump sum" contracts (to a limited contractor market for complex processing plants) making this approach high cost with minimal increase in delivery certainty.
- Government and community engagement and approval processes are more effectively conducted by Base Resources due to the complexity, risk, and existing/future relationships.
- Utilising Base Resources' knowledge gained through the Kwale project delivery and operation.
- Outsourcing or fixed price contracts where Base Resources doesn't have the requisite knowledge (power) or competitive value is tied to a contractor's unique methods or capability (marine and power).

The broad delivery approach is as follows

- Mining – Owner Implementation.
- Processing plants and field services – EPCM.
- Infrastructure – EPCM.
- Fiherenana bridge – EPC.
- Jetty, shiploader and marine infrastructure – EPC.
- Power – "self-supplied" by Base Toliara, with the generation facility to be constructed by an IPP that will operate and maintain that facility on Base Toliara's behalf.

Land acquisition

Foreign controlled companies are not permitted to own land in Madagascar but can obtain surface rights through lease arrangements with the Government.

A high-level overview of the process of obtaining surface rights being employed by Base Resources is as follows:

- Establish title/ownership of land – only a small number of the land parcels required have an existing formal title, the rest are held through customary interests.
- Agree/determine the land value. There are two options to do this:
  - Compulsory acquisition of land through the DUP process. Currently on hold pending the lifting of suspension following which the Evaluation and Compensation Committee (CAE) will finalise the field work required and determine compensation.
  - Private treaty negotiations direct with landowners utilising the compensation determined by the CAE as a benchmark. Currently on hold pending the lifting of suspension and completion of CAE's assessment.
- As Base Toliara cannot own land, titled land will either be leased from the owner or vested in Government. Land the subject of customary interests will be vested in Government.
- Where the land to be vested in Government is a customary interest, a title must first be created for that land in the name of the State.
- For land vested in the Government, Base Toliara will then negotiate a lease with the Government for the surface rights to the land held by the Government as required for the project.

Environment

Regulatory framework

- Environment Permit No 55-15/MEEMF/ONE/DG/PE is granted and valid.
- Approved *Plan de Gestion Environnementale* (PGE) (an environmental management plan) in place.
- *Office National Pour l'Environement* (ONE), the Malagasy environmental management authority, have advised that subsequent amendments to the Toliara Project should be made through an updated PGE and the Construction and Operations *Plan de Gestion Environnementale Spécifique* (PGES') – see below.
- The Construction PGES', prepared during FEED and submitted to ONE three months prior to commencement of construction, will present project changes to date.
- Operational PGES' will be prepared and submitted to ONE three months prior to commencement of operations.

Environmental and Social Impact Assessment (ESIA) documentation

A number of ESIAs have been prepared and approved over the years for the Toliara Project, with the principal documents being:

- 2005-2006: Scoping Report prepared and submitted to ONE.
- 2006-2007: Specialist studies conducted, not submitted to ONE.
- 2012: Revised Scoping Report submitted to ONE for public review.
- 2012-2014: Specialist assessments redone, detailed ESIA completed and submitted to ONE.
- 2015: PGE issued by ONE together with the Environmental Permit.
- 2017: Addendum ESIA submitted to ONE. PGE Addendum 1 issued by ONE.

Base Resources is committed to international best practice

The Toliara Project will develop and operate a comprehensive Environmental and Social Management System (ESMS) to meet the requirements of Base Resources' policies, Malagasy legislation and international best practice, including the Equator Principles, IFC Performance Standards and the World Bank Group's Environmental, Health and Safety Guidelines.

Environmental and Social Management System

- ESMS will give effect to Base Resources' commitments.
- ESMS based on a 'Plan-Do-Check-Act' business performance improvement cycle utilising risk and impact assessments as a key tool.
- ESMS components will include:
  - Update of the PGE to reflect name change and Project changes.
  - Summary ESIA to consolidate ESIAs and reflect Project changes.
  - PGES' for construction, operational and decommissioning phases for submission to ONE three months before the start of associated activities.
  - Construction phase, operational phase and decommissioning phase ESMPs.
  - Baseline studies – update of previous studies, new studies and modelling.
  - Comprehensive environmental monitoring program, including ecological monitoring.
  - Environmental programs to support Base Resources' commitment to improving biodiversity, promoting conservation and sustainability, including an indigenous tree nursery to research propagation methods of the region's unique flora, establishment of biodiversity corridors and offset and reforestation programs.

Key approvals – project development

Key Approval	Notes
Export facility	
MoU	Provides the mechanism for land to be incorporated into the export facility site
Permission	Agreement to allow construction and operation of the export facility site
Design and construction approvals, and issue of construction permit	
Land acquisition (export facility, road and mine site)	
Private contracts and agreement	Used to acquire private rights, where possible
Land decree classifying lands as State public domain	Act of Transferability (*acte de classement*) to be issued by way of decree
Government lease	Long term lease over government land (*Domaine privé de l'Etat*) in favour of Base Toliara. Applies to haulage road and mine site
Haulage road	
MoU	Establishes the basis for the construction and use of the haulage route
Design and construction approvals	

Key Approval	Notes
Camp	
Design and construction approvals, and issue of construction permit	
Borehole construction and water extraction	
Mine construction	
Design and construction approvals, and issue of construction permit	
Borehole construction and water extraction	
Authorisation to operate the power facility (Autoproduction authorisation)	Applies to larger facilities (over 500kW for thermal, hydraulic and solar installations, and over 1MW for biomass installations, geothermal, wind or waste processing)
Environment	
Environmental impact assessment	Environmental impact assessment approved through issuance of PGE (to be reviewed subject to update of baseline studies)
Environmental permit	Environmental permit has been issued
Large mining investment law	
Large Mining Investment Law (LGIM) certification	Provides financial and legal stability regime for large scale mining investments, favourable customs regime, guaranteed foreign exchange rights and certain tax benefits

Capital cost

Stage 1 capital cost is estimated at US$520m (accuracy +10%/-5%) based on definitive engineering designs, tendered pricing, budget quotes and escalation allowance.
Stage 2 capital cost is US$137m.

- The Capital Cost Estimate (CCE) reflects the maturity of the design and is based on engineering layout and design drawings, equipment lists or general arrangement layouts and prices have been derived from a combination of the following sources:
  - 42% from project specific tenders (marine, export facility shed piling, bridge, IPP, drilling and equipment), 50% from project specific budget quotations, 7% estimated or built-up rates and 1% factored from similar works.
- Approx. 25-30% of engineering has been completed, underpinning a CCE accuracy of +10 to -5%.
- An extensive Tender and BQR process was conducted for major contract packages to establish unit rates that reflect the market conditions in Madagascar. Firm quotes were received (Q4-2019) for all major mechanical / electrical equipment vendor packages and over 90% of the CCE is supported by pricing sourced from reputable suppliers and contractors.
- The onshore piling, offshore marine facility and bridge costs were obtained via a tender process supported by post-tender technical and commercial clarification meetings.
- The DFS CCE completed in December 2019 was updated in Q2-2021 for:
  - Escalation, including additional owners labour costs, reflecting the DFS2 revised FID timing. The cost escalation estimate has been derived from data collected from various African projects and forward-looking views from 5 different sources.
  - Applicable foreign exchange rates - 71% of CCE is USD based, 14% ZAR, 12% AUD and 3% EUR.
  - Contingency provision reduced to 9.7% (down from 10.6%) due to the increased scope certainty following de-risking and optimisation work completed since DFS release.
- Owner's costs were developed from Kwale Operations experience and the planned production ramp up.

Capital Cost Estimate (US$m)	Stage 1	Stage 2
Mining (including HME and DMU)	39	20
Process Plants	110	67
Infrastructure (Camp, roads, bridge, power, water, buildings)	86	8
Product Storage & Export Facility	82	-
Professional Services (EPCM's, Vendor Reps, Specialists Consultants)	32	6
Owner's costs (see further breakdown in table below)	66	6
Sub total	**415**	**107**
Escalation (14.2% and 16.0%)	59	17
Contingency (9.7% and 10.5%)	46	13
Total Project Capital Costs	**520**	**137**

Owner's Costs Estimate (US$m)	Stage 1
Integrated Management Team – Labour & Expenses	12.7
Initial Clearing for mining, TSF & Starter Pit	1.4
Camp operating (based on Kwale + US$2m fuel)	5.8
Spares, tools and 1st fills	8.0
In-country operations (community, environment, external affairs, operations team, finance, admin)	32.9
Light Vehicles	2.0
1% customs stamp duty on value of imports	1.1
Plant Mobile Equipment	2.6
Total Owners Cost	**66.4**

Operating costs

Operating costs have been derived from first principles and experience gained at Kwale Operations, incorporating local Malagasy cost inputs where appropriate.

Operating cost category	LOM Total US$m	US$m per annum[1]	US$/t mined[1]	US$/t produced[1]	Comments
Power	720	19	0.79	18.2	Power is based on a solar hybrid solution using HFO as a primary fuel source and a small amount of supplementary diesel. Assumes a HFO price of US$0.63/L, which results in an average power price of US$0.16/kWhr.
Maintenance	602	16	0.67	15.5	Maintenance is based on Kwale experience and scaled where appropriate.
Labour – expatriates	159	4	0.16	3.8	Operations reach 60 expats in early years, before dropping to 17 after 6 years and reaching a steady state of 8 expatriate senior managers from 2033 onwards.
Labour – nationals	276	7	0.30	6.9	Excluding contractors and corporate staff, operations commence with 631 national employees, before peaking at 820 in 2033 following completion of the Stage 2 and transition of managerial roles.
Fuel – drying	259	7	0.29	6.6	Diesel usage for the MSP drying process is based on Kwale experience and a delivered diesel fuel price of US$0.85/L.
Fuel – mobile equipment	161	4	0.18	4.1	Equipment fuel burn rates are from Kwale experience, and a delivered diesel fuel price is US$0.85/L.
Product transport & export facility rates	342	9	0.38	8.7	Bulk transport to the export facility estimated at US$3.45/t plus US$0.60/t for free issue diesel. Marine operations will be contracted to a chartering service at US$2.4M per annum. Port of Toliara export rates are estimated at US$2/t shipped, plus annual lease costs of US$0.7M.
Flocculant	14	1	0.02	0.4	Flocculant usage between 0.08 and 0.12kg/t slime at cost of US$2.85/kg.
Other operating costs	410	11	0.44	10.3	Other fixed operating costs, including insurance, camp management, security contractors and training.
Total operating costs	**2,943**	**77**	**3.22**	**74.5**	
Royalties	475	13	0.53	12.3	Government royalty rate of 4%.
Total operating costs (incl. royalties)	**3,419**	**90**	**3.75**	**86.7**	

[1] Annual averages exclude first and last part-operating years

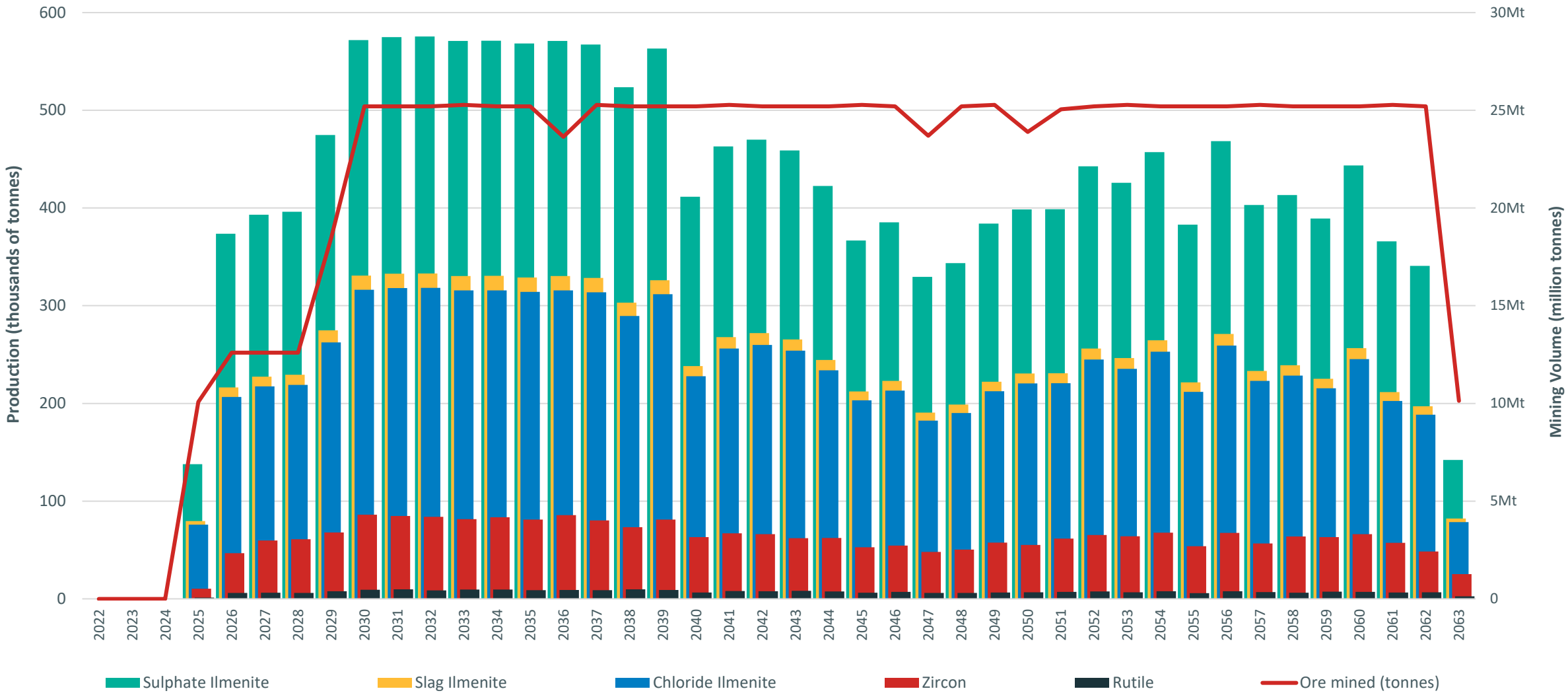
Mining and production profile

Production Profile	Life of Mine (LOM)		Stage 1[#] Years 2 - 4.5	Peak Stage 2[#] Years 6 - 15	Stage 2[†] Year 16+
	Total	annual avg*	annual avg	annual avg	annual avg
Ore mined (Mt)	904	23.9	12.6	25.1	25.1
HM%	6.1%	6.1%	9.4%	7.1%	5.4%
HMC produced (Mt)	55.6	1.5	1.2	1.8	1.4
Period	38.4	37.0	3.5	10.0	23.0
Produced (kt):					
Sulphate ilmenite	16,941	450	388	566	407
Slag ilmenite	9,804	261	225	327	236
Chloride ilmenite	9,371	249	215	313	225
Total ilmenite	**36,115**	**960**	**828**	**1,206**	**868**
Rutile	283	8	6	9	7
Zircon	2,468	66	56	82	60

excludes ramp up
* Does not include the first and last partial operating years.
† Does not include the last partial operating year.

Mining and production profile

Stage 2 mining starts up in operating year 4.25 and increases mining volume to 25Mtpa. Dips in mining volume are due to the impact of WCP moves. Further optimisation of the mine plan is required to balance production in the latter years of the project once further resource definition is completed



Glossary and Appendices

Glossary

Term	Meaning
$** or **US$ or **USD**	United States Dollars
Al_2O_3	Aluminum oxide
ASX	Australian Securities Exchange
Base Toliara	Base Toliara SARL, Base Resources' wholly owned Malagasy operating subsidiary
Base Resources or the **Company**	Base Resources Limited (ABN 88 125 546 910)
CaO	Calcium oxide
Capex	Capital expenditure
Ce	Cerium
CeO_2	Ceric oxide
Competent Person	The JORC Code requires that a Competent Person be a Member or Fellow of The Australasian Institute of Mining and Metallurgy, of the Australian Institute of Geoscientists, or of a 'Recognised Professional Organisation'. A Competent Person must have a minimum of five years' experience working with the style of mineralisation or type of deposit under consideration and relevant to the activity which that person is undertaking
DFI	Development finance institution
DFS	2019 definitive feasibility study for the Toliara Project, the results of which were announced on 12 December 2019
DFS2	2021 definitive feasibility study, the results of which are set out in this document
DMU	Dry mining unit
DUP	Compulsory acquisition of land through the process called Declaration of Public Utility
Dy / Dy_2O_3	Dysprosium / Dysprosium oxide
EPC	Engineer-procure-construct

Term	Meaning
EPCM	Engineer-procure-construct-manage
Er	Erbium
E&S	Environmental and social
ESIA	Environmental and social impact assessment
ESMS	Environmental and social management system
EPC	Engineer-procure-construct
EPCM	Engineer-procure-construct-manage
ESIA	Environmental and social impact assessment
ESMS	Environmental and social management system
Eu / Eu_2O_3	Europium / Europium oxide
FEED	Front end engineering development
FEL	Front end loader
Fe	Iron
FeO	Iron oxide
Fe_2O_3	Iron (III) oxide
FID	Final investment decision by the Board of Base Resources to commence construction of the Toliara Project
FOB	Free on board
FY	Financial year - 1 July to 30 June
GARN	Garnet
Gd / Gd_2O_3	Gadolinium / Gadolinium oxide
Government	Government of Madagascar
HiTi	High grade leucoxene

Glossary

Term	Meaning
HM	Heavy mineral
HMC	Heavy mineral concentrate
HME	Heavy mobile equipment
Ho	Holmium
IBP	International best practice
ICSU	Intermediate clay sand unit
IFC	International Finance Corporation
ILM	Ilmenite
Indicated Mineral Resource	An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit
Inferred Mineral Resource	An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade (or quality) are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply but not verify geological and grade (or quality) continuity. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes
IPP	Independent power producer
IRR	Internal rate of return
JORC or JORC Code	The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves 2012 Edition, as published by the Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia.
JV	Joint venture

Term	Meaning
K_2O	Potassium oxide
kt	Thousand tonnes
kV	Kilovolts
Kwale Operations	Base Resources' mineral sands operations in Kwale county, Kenya
kWhr	Kilo watt hour
La / La_2O_3	Lanthanum / Lanthanum oxide
LA	Lanthanide series of rare earth elements
LEUC	Leucoxene
LGIM	Large Mining Investment Law
LOM	Life of mine
LOS	Lifting of the on-the-ground suspension
LSU	Lower sand unit
LST	Limestone
Lu	Lutetium
M&I	Measured and Indicated Mineral Resource
Measured Mineral Resource	A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade (or quality), densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit
MCP	Monazite Concentration Plant
MG12 spirals	A new high-performance spiral separator from Mineral Technologies
MgO	Magnesium oxide

Glossary

Term	Meaning
Mineral Resource	Mineral Resources are a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories
Minmod	A company developed mineralogy modelling technique, it comprises an XRF analysis of the magnetic and non-magnetic fractions of each composite or sample, the results from which are then back-calculated to determine in-ground mineralogy
MnO	Manganese oxide
MON	Monazite
Monazite Project	the project for exploitation of Toliara Project's contained monazite defined by the Monazite PFS
MSP	Mineral separation plant
Mt	Million tonnes
Mtpa	Million tonnes per annum
MW	Megawatt
Nb_2O_5	Niobium pentoxide
Nd / Nd_2O_3	Neodymium / Neodymium oxide
NGO	Non-governmental organisation
NPV	Net present value
ONE	Office National Pour l'Environement

Term	Meaning
Ore Reserves	Ore Reserves are the economically mineable part of Measured and/or Indicated Mineral Resources. Ore Reserves are sub-divided in order of increasing confidence into Probable and Proved categories
OS	Oversize
P_2O_5	Phosphorus pentoxide
PE 37242	Base Toliara's Permis D'Exploitation 37242, which is a mining lease under Malagasy law
PFS	Pre-feasibility study
PPE	Personal protective equipment
PPM	Parts per million
Pr / Pr_6O_{11}	Praseodymium / Praseodymium oxide
Probable Ore Reserves	The economically mineable part of an Indicated, and in some circumstances, a Measured Mineral Resource. The confidence in the Modifying Factors applying to a Probable Ore Reserve is lower than that applying to a Proved Ore Reserve
Proved Ore Reserves	The economically mineable part of a Measured Mineral Resource. A Proved Ore Reserve implies a high degree of confidence in the Modifying Factors
RE	Rare earths
REO	Rare earth oxide
RMP	Radiation management plan
ROM	Run of mine
RUT	Rutile
RWG	Resettlement working group
SiO_2	Silicon dioxide
SL	Slime or clay

Glossary

Term	Meaning
Sm / Sm_2O_3	Samarium / Samarium oxide
SMP	Structural mechanical and pipework
SO_3	Sulfur trioxide
Solar PV	Solar photovoltaic system
SSU	Surficial silt unit
t	Metric tonne
Tb / Tb_4O_7	Terbium / Terbium oxide
TiO_2	Titanium dioxide
Ti	Titanium
Toliara Project or **Project**	The mineral sands development project, based on the Ranobe deposit, located in south west Madagascar, 45km north of the regional port town of Toliara
Tm	Thurium
tph	Tonnes per hour
TREO	Total Rare Earth Oxides
TZMI	TZ Minerals International. An independent mineral sands consulting group
WCP	Wet concentration plant
UCC	Up current classifier
USU	Upper sand unit
USSU	Upper silty sand unit
U	Uranium
V_2O_5	Vanadium pentoxide
VAT	Value added tax

Term	Meaning
Y / Y_2O_3	Yttrium / Yttrium oxide
Yb	Ytterbium
ZIR	Zircon
ZrO_2	Zirconium

Appendix - Mineral Resources by Zone

Ranobe Deposit Mineral Resources estimate as at 27 September 2021							HM Assemblage as % of HM					
Zone	Category	Tonnes (Mt)	HM (Mt)	HM (%)	SL (%)	OS (%)	ILM (%)	RUT (%)	LEUC (%)	ZIR (%)	MON (%)	GARN (%)
USU Upper Sand Unit	Measured	575	36	6.2	3.7	0.1	74	1.0	1.0	5.9	1.9	2.2
	Indicated	654	30	4.6	3.6	0.2	71	1.0	1.0	5.9	1.9	3.6
	Inferred	820	27	3.3	2.8	0.1	69	1.0	1.0	5.8	2.0	4.5
	Total USU	**2,040**	**93**	**4.5**	**3.3**	**0.1**	**72**	**1.0**	**1.0**	**5.9**	**1.9**	**3.3**
SSU Surface Silt Unit	Measured	4	0.2	5.2	21	0.4	73	1.1	0.8	5.9	2.0	4.0
	Indicated	8	0.3	3.7	16	0.7	69	0.8	1.0	5.7	2.0	4.2
	Inferred	6	0.2	3.0	18	0.4	70	0.7	1.0	7.7	1.7	4.7
	Total SSU	**18**	**0.7**	**3.8**	**18**	**0.5**	**71**	**0.9**	**0.9**	**6.3**	**1.9**	**4.3**
USSU Upper Silty Sand Unit	Indicated	13	0.8	6.3	23	2.3	72	0.9	0.8	6.5	1.5	4.4
	Inferred	10	0.7	6.6	26	0.7	73	0.8	0.8	6.4	1.6	4.8
	Total USSU	**23**	**1.5**	**6.4**	**25**	**1.6**	**72**	**0.8**	**0.8**	**6.5**	**1.6**	**4.6**
ICSU Intermediate Clay Sand Unit	Measured	18	0.5	3.0	23	3.0	68	1.3	1.2	6.4	2.2	2.3
	Indicated	118	3.6	3.0	24	1.8	68	1.1	1.1	6.1	2.2	3.5
	Inferred	354	11	3.2	25	1.8	69	1.0	1.0	5.8	2.1	3.8
	Total ICSU	**490**	**15**	**3.2**	**25**	**1.8**	**69**	**1.1**	**1.1**	**5.9**	**2.1**	**3.7**
	Grand Total	**2,580**	**111**	**4.3**	**7.7**	**0.4**	**71**	**1.0**	**1.0**	**5.9**	**2.0**	**3.4**

Table subject to rounding differences. Mineral Resources estimated at 1.5% HM cut off grade.
*Mineral Resources are reported inclusive of Ore Reserves

Appendix - TREO deposits further details and source data

Deposit Name	Owner	Location	Status	Mineral	Resource or Reserve (as applicable)	Source documents
Toliara	**Base Resources**	**Madagascar**	**BFS**	**Ilmenite, Rutile, Zircon, Monazite**	**Measured 597Mt; Indicated 793Mt; Inferred 1,190Mt; Total 2,580Mt**	Announcement titled "Updated Ranobe Mineral Resources and Ore Resources estimates" dated 27 September 2021
Mt Weld	Lynas Rare Earths	Australia	Operating	Monazite	Proven 13.2Mt; Probable 4.5Mt; Total 17.7 Mt	Presentation dated 2 May 2012 and 2023 Annual Report
Browns Range	Northern Minerals	Australia	BFS	Xenotime	Proven 0; Probable 3.3Mt; Total 3.3Mt	Announcement dated 10 October 2022 (Based on Mineral Resources Grades) 2023 Annual Report
Yangibana	Hastings Technology Metals	Australia	BFS	Monazite	Proven 4.7Mt; Probable 12.0Mt; Total 16.7Mt	Announcement dated 21 February 2022 (Based on mixed rare earth carbonate product) Announcement dated 27 July 2021
Dubbo	Australian Strategic Materials	Australia	Operating	Zirconia, Hafnium, Niobium and Rare Earths	Proven 18.9Mt; Probable 0Mt; Total 18.9Mt	Presentation dated November 2016 (Based on partially separated RE oxide product suite) 2023 Annual Report
Eneabba	Iluka Resources	Australia	Operating	Ilmenite, Zircon, Monazite, Xenotime	Proven 0.81Mt; Probable 0.15Mt; Total 0.96Mt	Presentation dated 28 February 2023 Announcement dated 18 February 2020
Wimmera	Iluka Resources	Australia	BFS	Ilmenite, Leucoxene, Zircon, Rutile, Monazite, Xenotime	Proven 0Mt; Probable 180Mt; Total 180Mt	Presentation dated 28 February 2023 Announcement dated 22 February 2023
Balranald	Iluka Resources	Australia	FID	Ilmenite, Rutile, Zircon, Monazite, Xenotime	Measured 5.9Mt; Indicated 26.3Mt; Inferred 4.5MT; Total 36.8Mt	Presentation dated 28 February 2023 Announcement dated 21 February 2023
Ngualla	Peak Rare Earths	Tanzania	BFS	Bastnaesite	Proven 17.0Mt; Probable 1.5Mt; Total 18.5 Mt	Announcement dated 24 October 2022 (Based on Mineral Resources grades) 2023 Annual Report
Mountain Pass	MP Materials	USA	Operating	Bastnaesite	Proven 0.34Mt; Probable 28.96Mt; Total 29.3 Mt	Form 10-K for FY ended 31 December 2022 (Based on Mineral Resources grades)

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